

# Pilot flex accounting to encourage more water conservation in a combined Lake Powell-Lake Mead system



David E. Rosenberg

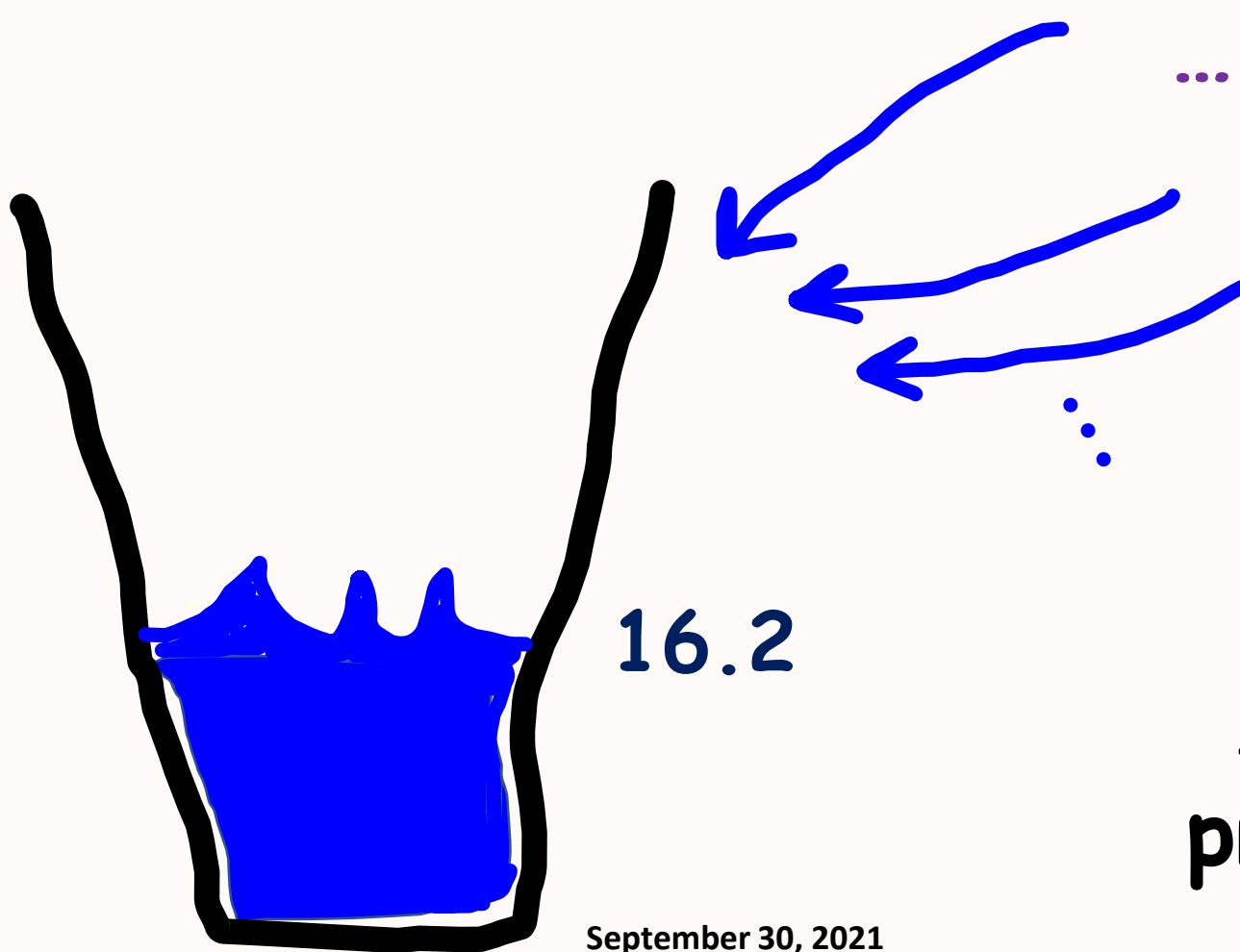
@WaterModeler

[david.rosenberg@usu.edu](mailto:david.rosenberg@usu.edu)

<http://rosenberg.usu.edu>

Manage the water we already have ...

Combined Powell + Mead  
Active Storage  
(MAF)



... and will come in  
future years ...

... while build on  
prior agreements.

September 30, 2021

# 1. Guiding principles

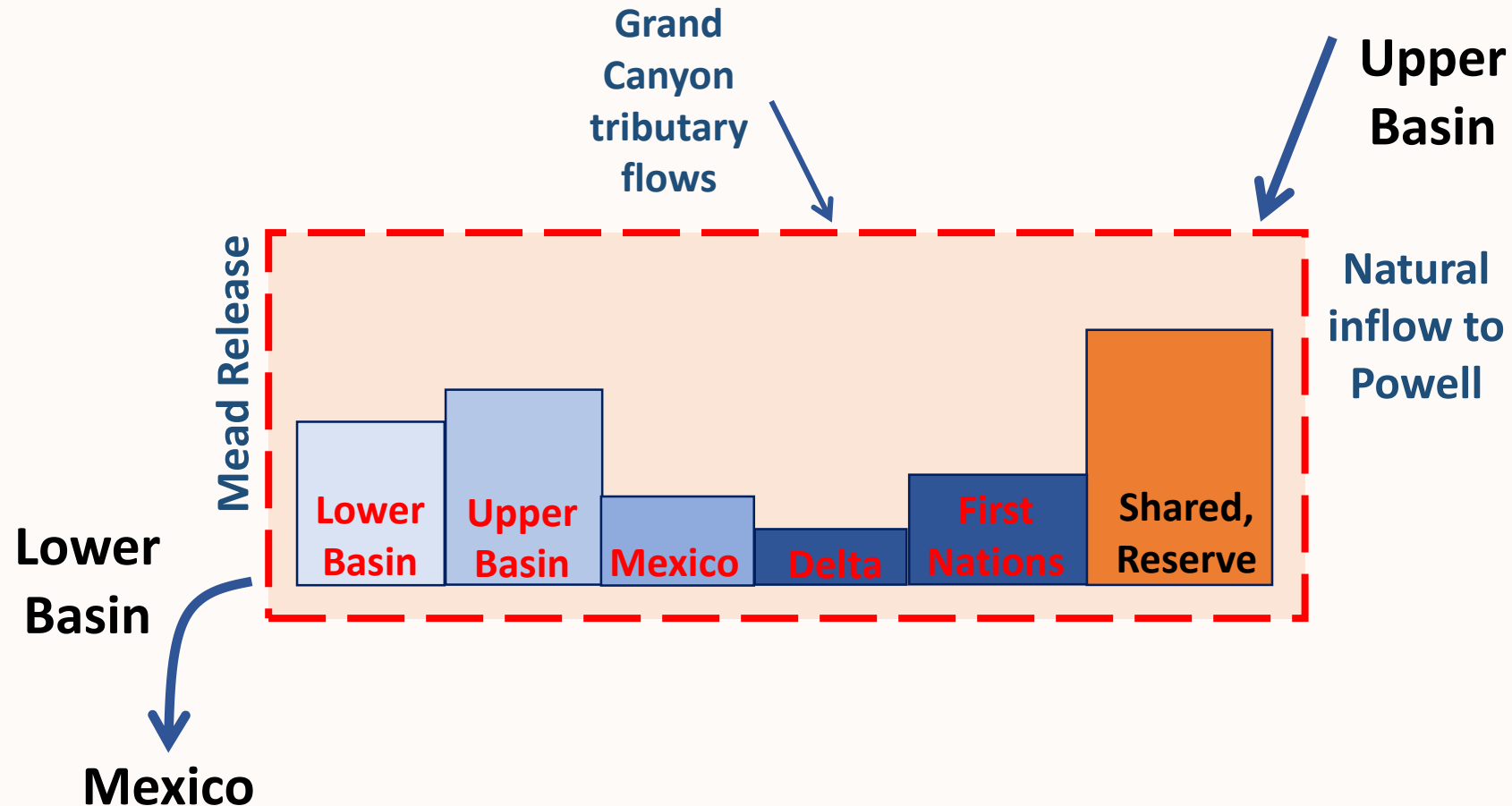
Give managers more flexibility to conserve and consume water independent of other parties.

Provoke thought and discussion on renegotiations of Lake Powell-Lake Mead operations.

Convert a shrinking pie (lose-lose) conflict — Colorado River drying — into more positive experiences for people and endangered fish.

Build on prior agreements.

## 2. Region of Combined Management



## 3. Include more parties

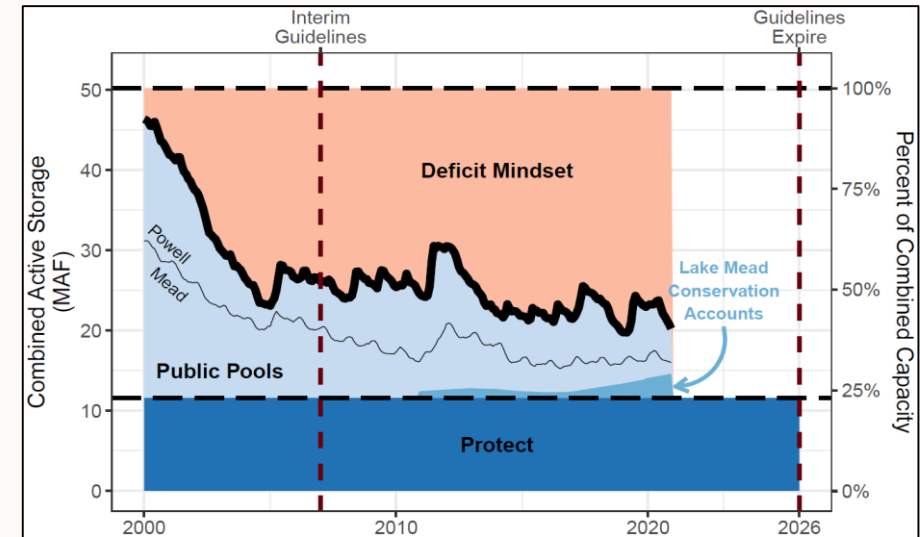
## 4. Manage all available water not just prior conserved water

$$\begin{array}{ccccccccccc} \text{Available} & & & & & & & & & & \\ \text{Water} & = & \text{Flex} & & \text{Share of} & & \text{Share of} & & \text{Purchases} & - & \text{Sales} \\ & & \text{Account} & + & \text{natural} & - & \text{Evaporation} & + & & & \\ & & \text{Balance} & & \text{flow} & & & & & & \\ & & & & & & & & \underbrace{\hspace{10em}} & & \\ & & & & & & & & \text{Optional} & & \end{array}$$

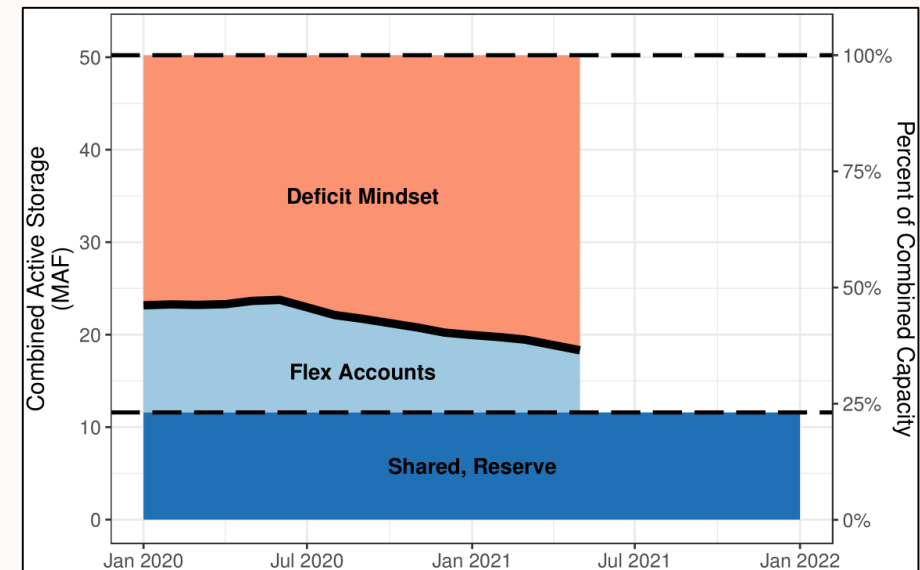
## 5. Adapt releases to natural flow and storage levels

## 6. Key Steps

1. Decide which parties get a flex account.
2. Assign reservoir storage (top) to accounts (bottom).
3. Divide natural flow among parties.
4. Parties conserve & consume within their available water.
5. Split combined storage between Powell & Mead.



2. Assign reservoir storage (top) to accounts (bottom).



## 7. Benefits

1. Give parties more flexibility.
2. Manage all water not just prior conserved water.
3. Adapt releases to inflows.
4. Include more parties.
5. More flexibility to keep status quo for endangered fish.
6. Carry over conservation account balances.
7. Nudge "my basin-reservoir-contingency plan" towards "our" reservoirs.

## 8. Effect on Existing Agreements?



### The Same

- 1922 Compact
- 1928 Boulder Canyon Project Act
- 1944 US-Mexico Treaty
- 1948 Upper Basin Compact
- 1956 CRSP
- 1964 Arizona v. California
- 1968 CRBPA
- 2007 Lake Mead conservation account balances, Quantified surplus, Shortage conditions
- 2012 and 2017 Minutes 319 and 323
- 2019 Drought Contingency Plan contributions, protect volumes, contribute for another party
- Expiration date for operations

### May Change

- 2007 Lake Powell-Lake Mead Equalization



# Flex accounting meets Interim Guidelines goals

- ✓ Encourage conservation.
- ✓ Plan for shortages.
- ✓ Closer coordinate Lake Powell and Lake Mead operations.
- ✓ ~~Preserve~~ Increase flexibility to deal with further challenges such as climate change and deepening drought.
- ✓ Implement operational rules for a long – but not permanent – period.
- ✓ Federal government facilitates – but not dictates – informed decision-making.
- ✓ Encourage parties to address future controversies on the Colorado River through consultation and negotiation... not litigation.

## 9. How can I help?



Manage a flex account!



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<https://github.com/dzeke/ColoradoRiverCoding/tree/main/ModelMusings>



David E. Rosenberg

@WaterModeler

[david.rosenberg@usu.edu](mailto:david.rosenberg@usu.edu)



dzeke