

# Introduction and Overview: History and Operations of the Colorado River

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# In the Headlines...

## With new plans, Colorado River states draw battle lines over who should bear the brunt of future water cuts

By Ella Nilsen, CNN

🕒 5 minute read · Published 4:39 PM EST, Wed March 6, 2024



### The 20 Farming Families Who Use More Water From the Colorado River Than Some Western States

Tens of millions of people — and millions of acres of farmland — rely on the Colorado River's water. But as its supply shrinks, these farmers get more water from the river than entire states.

by Nat Lash, ProPublica, and Janet Wilson, The Desert Sun  
Photos and video by Jay Calderon, The Desert Sun

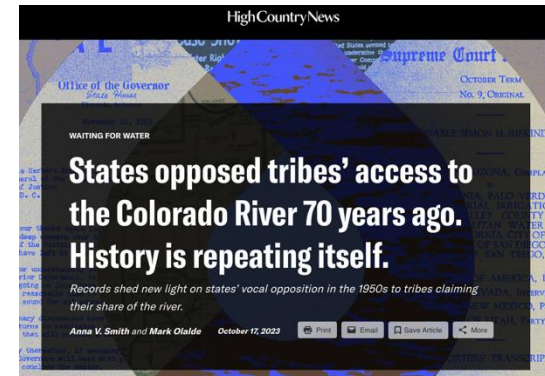


Nov. 9, 2023

TIME

BY **ANISHA KOHLI**

MAY 26, 2023  
2:08 PM EDT



### Inside Climate News

Pulitzer Prize-winning, reporting on the biggest planet.

### Feds Bet on Paying for Water Conservation to Protect the Colorado River

Arizona and other states have agreed to use considerably less water from the river through 2026, thanks in part to a wet winter.

By Wyatt Myslow  
November 7, 2023

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CLIMATE • ADAPTATION

Colorado River Drought Crisis is Fostering a More Collaborative U.S.-Mexico Relationship

6 MINUTE READ



# Historically Low Lake Levels

Lake Mead



Source: CNN.

Lake Powell



Source: Getty.





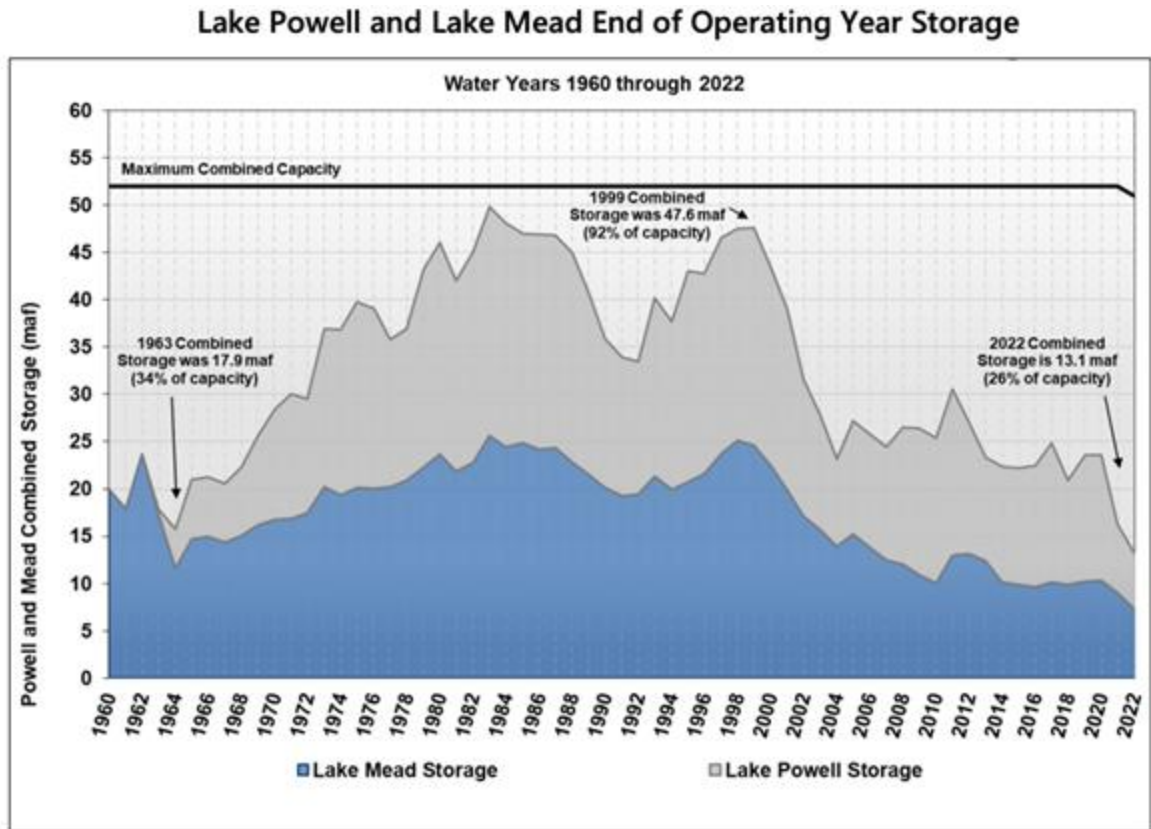
- runs 2,330 km from the Rocky Mountains to the Gulf of California, draining parts of seven U.S. states and two Mexican states
- flows through 11 national parks and monuments
- 277-mile segment of river passing through the Grand Canyon
- for 27 km, the river is the international boundary between the U.S. and Mexico
- 40 million people
- 30 federally-recognized tribes
- 5 million acres of farmland
- 15 dams on mainstem of river
- important sources of hydropower



# A Changing Climate

Climate models suggest decline of up to 30% of water balance

- reduction of snowpack
- droughts
- increase of water evaporation

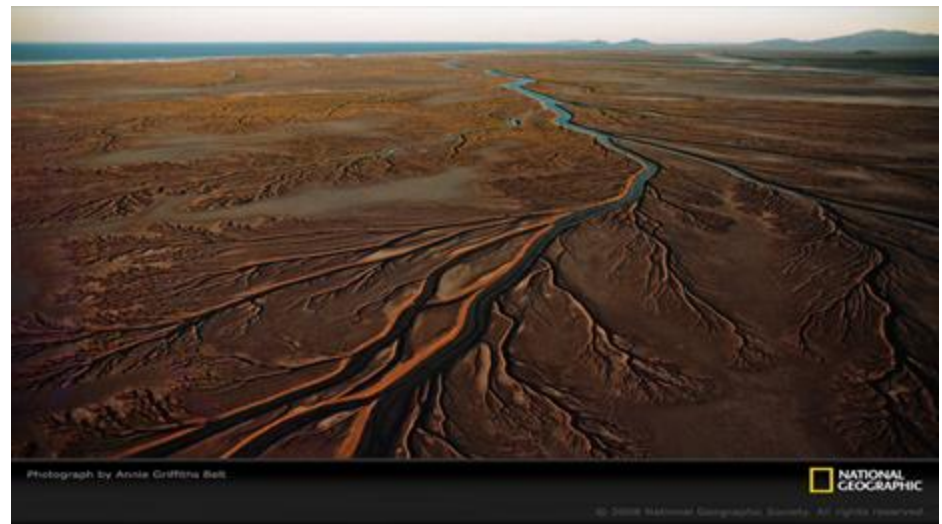
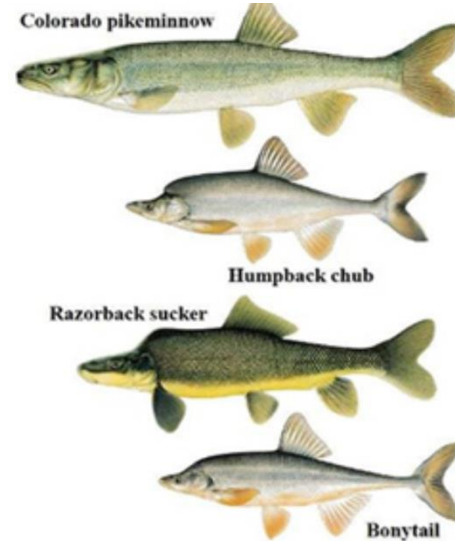


US Bureau of Reclamation (2023), *Final SEIS for Near-term Colorado River Operations*



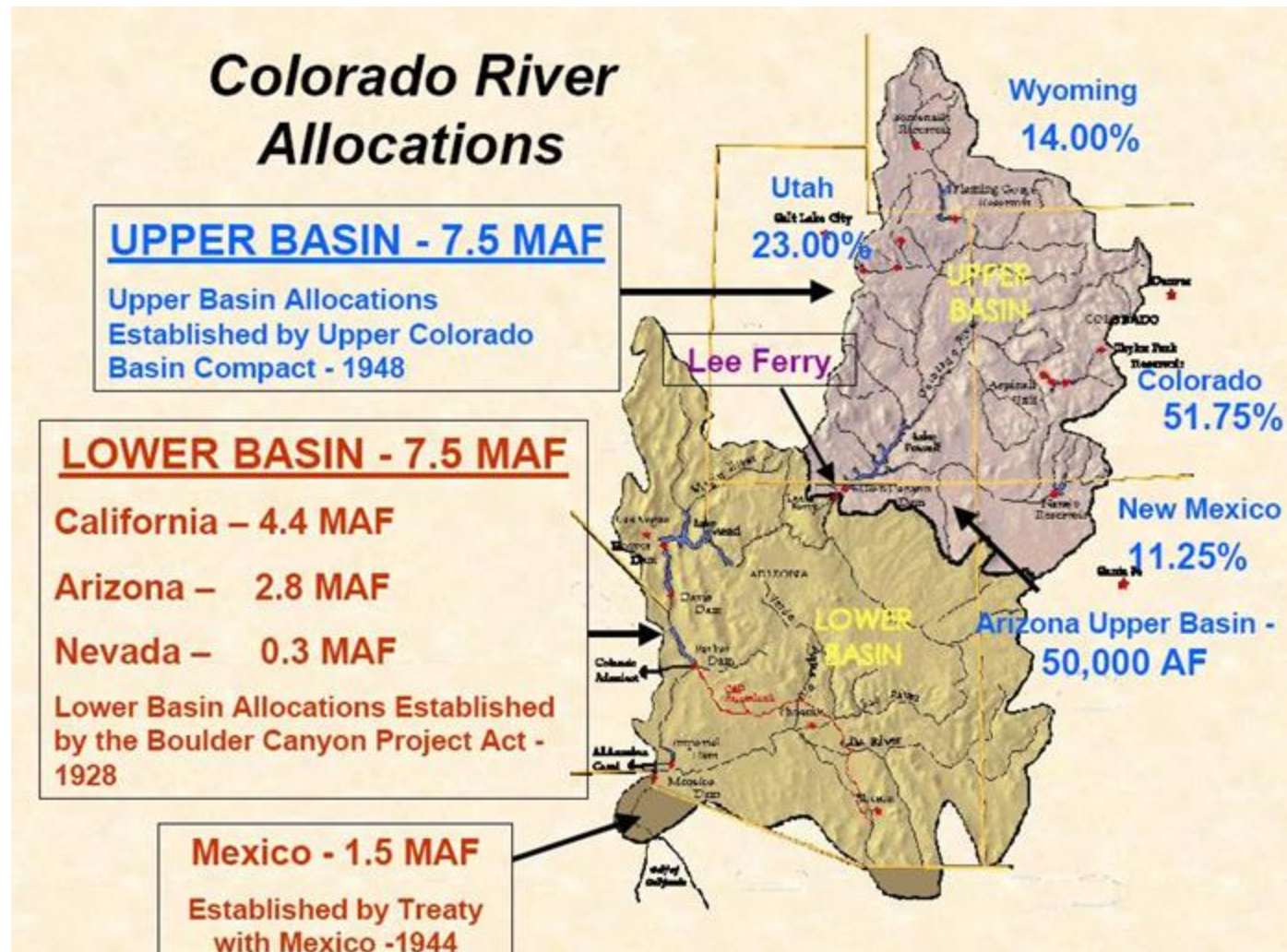
# Ecological Impacts in the Basin

- fragmentation of river ecosystems
- reservoir sedimentation
- invasive and endangered species
- increasing salinity
- vanishing Colorado River Delta





# Colorado River Compact (1922)





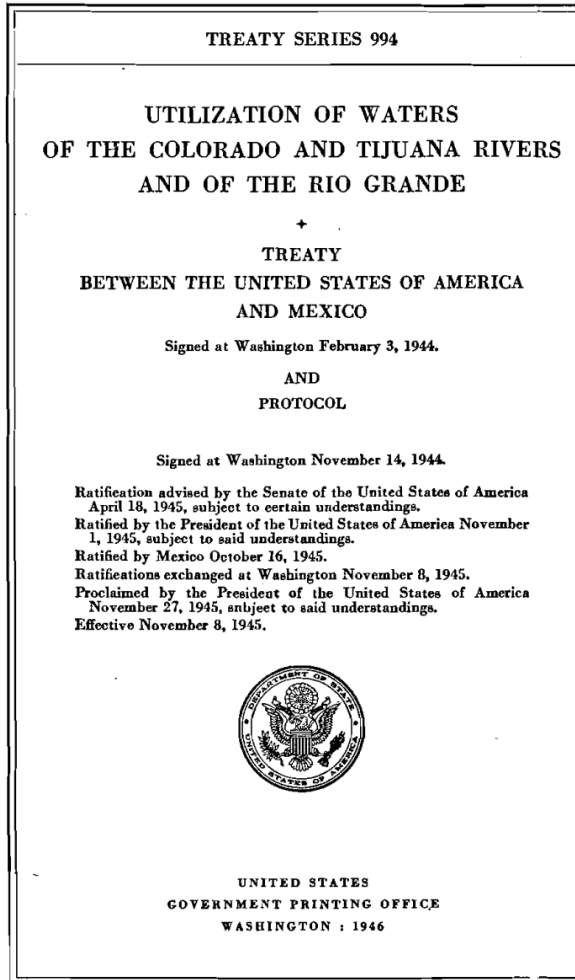
# Dam Building in the Basin

- 1930s Big Dam era
- Hoover Dam dedicated in 1935
- Glen Canyon completed in 1966
- Change in focus from rural irrigation to urban



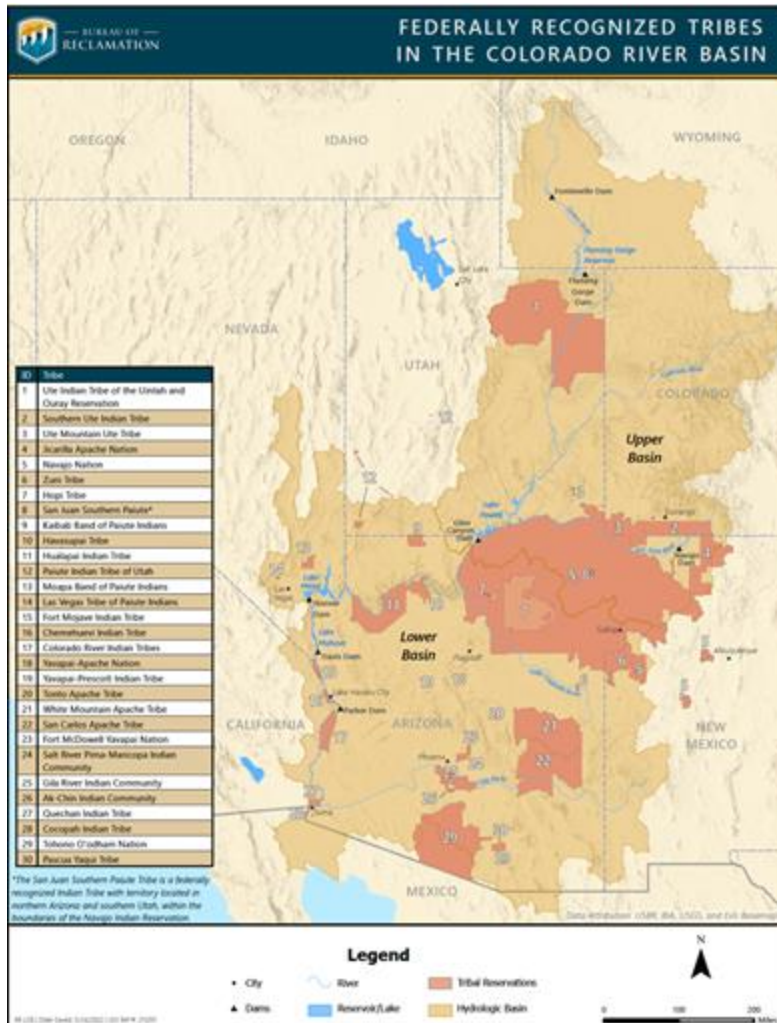


# US-Mexico Treaty (1944)





# Tribal Water Rights



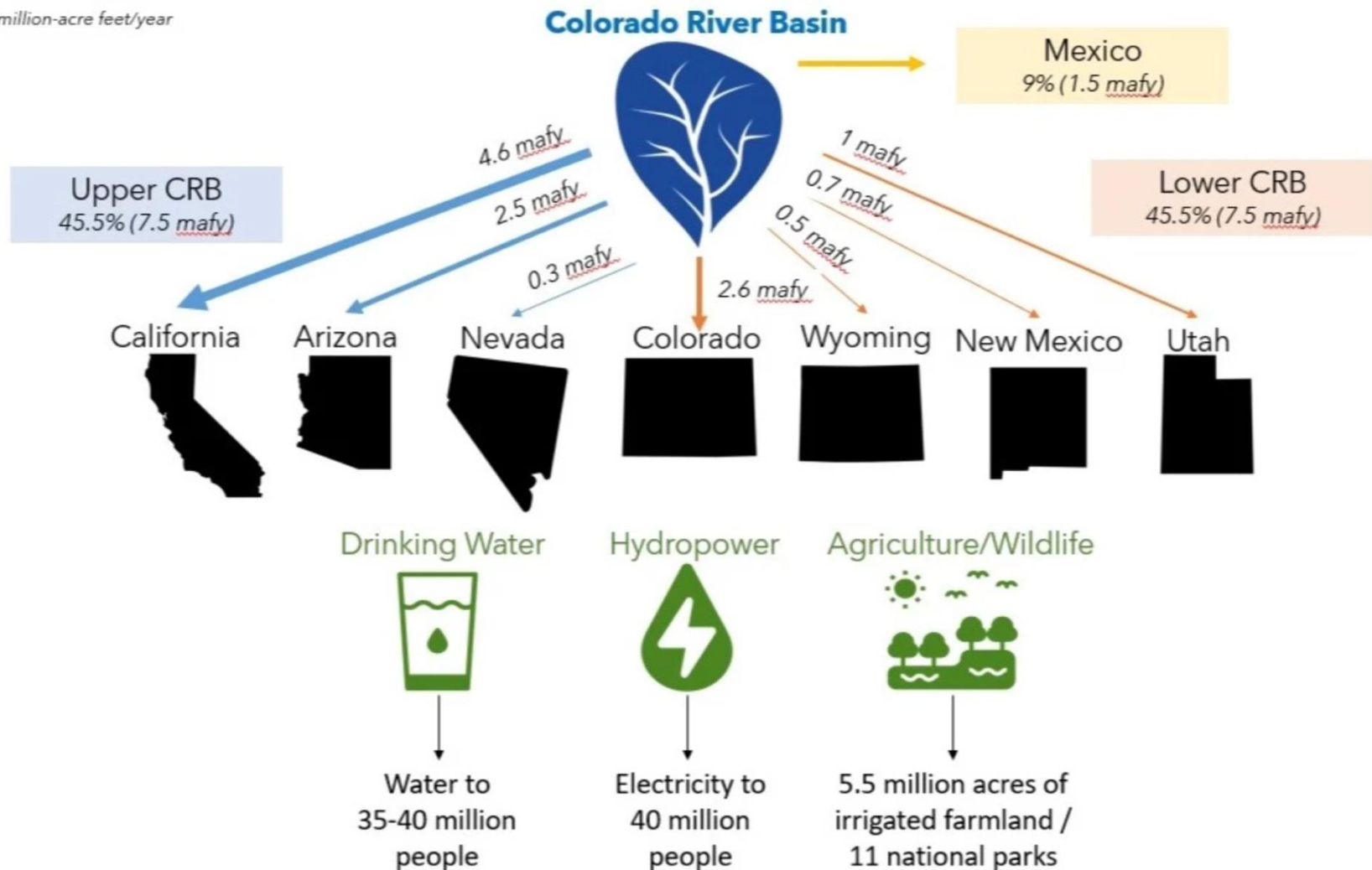
## Unresolved Tribal Claims

Tribe	State	Status <sup>44</sup>	Total Acre-Feet/Year
Havasupai	AZ	Outstanding	Not available
Hopi	AZ	Outstanding	Not available
Hualapai	AZ	Settlement pending congressional action	3,414 to 4,000
Kaibab Paiute Band	AZ/UT	Outstanding	Not available
Navajo Nation	AZ	Settlement negotiations ongoing	Not available
Pascua Yaqui	AZ	Outstanding <sup>45</sup>	Not available
San Carlos Apache Tribe	AZ	Outstanding	Not available
San Juan Southern Paiute Tribe	AZ/UT	Outstanding	22,326 <sup>46</sup>
Tohono O'odham Nation	AZ	Settlement negotiations ongoing (Sif Oidak District)	8,000
Tonto Apache Tribe	AZ	Settlement negotiations ongoing	Not available
Ute Indian Tribe (Uintah-Ouray)	UT	Pending litigation	370,370 <sup>49</sup>
Yavapai-Apache Nation	AZ	Settlement negotiations ongoing <sup>40</sup>	Not available
<b>Total</b>			<b>404,696</b>

Water and Tribes Initiative (2021), *The Status of Tribal Water Rights in the Colorado River Basin*



\*maf-y= million-acre feet/year





# Facing a “Structural Deficit”

## Use exceeds supply

7.5 Upper Basin  
+ 7.5 Lower Basin  
+ 1.5 Mexico

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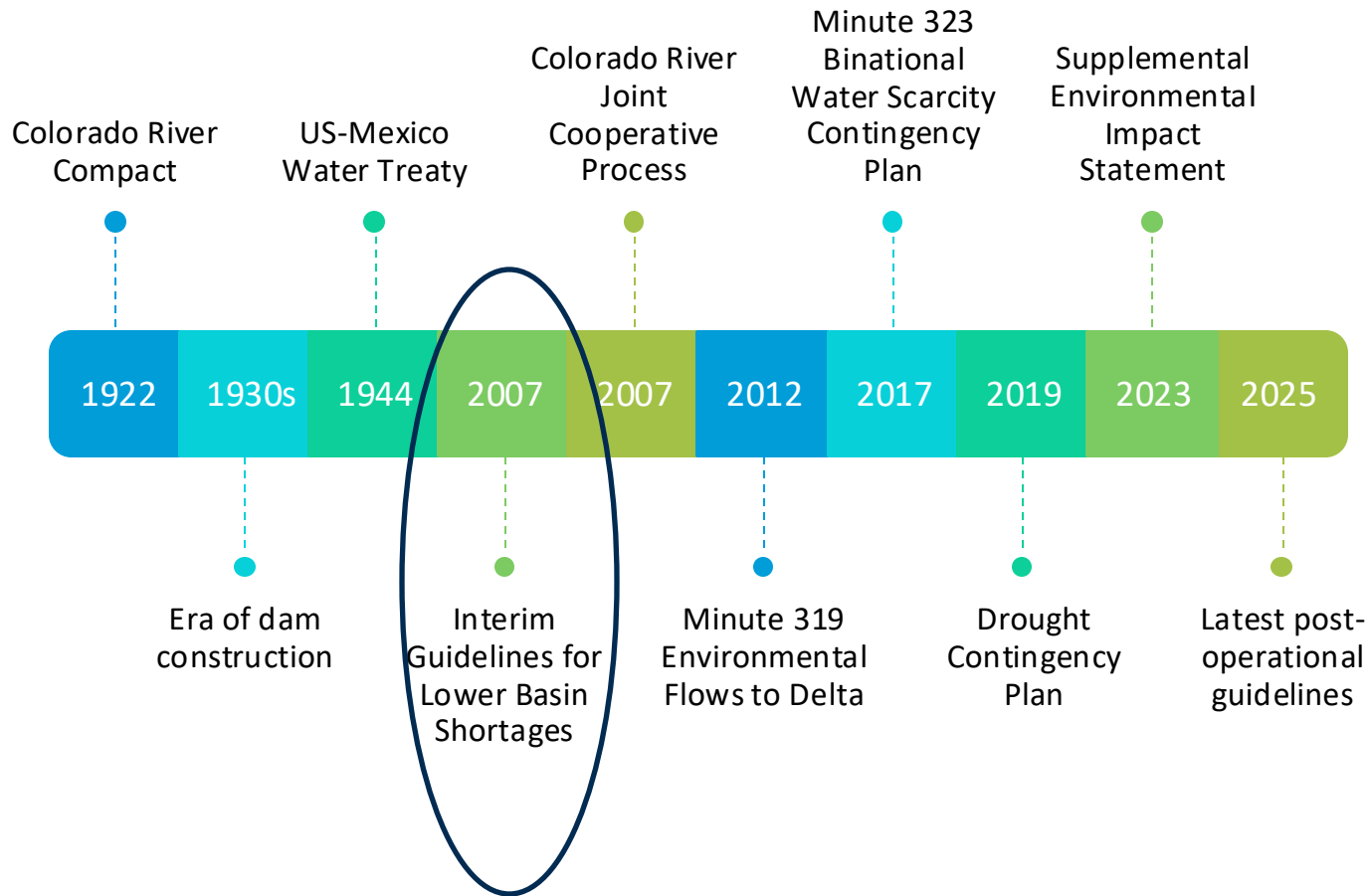
= 16.5 maf

13.2 maf average flow

Climate change is expected to further reduce the river's flow by up to 30 percent by 2050



# Governance Timeline





# Parallel Processes: domestic and international

## US Processes

1922 Colorado River Compact

2007 Interim Guidelines

2019 Drought Contingency Plans

2023 Supplemental EIS

Post-2026 Renegotiations

## International Processes

1944 US-MX Water Treaty

2007 CR Joint Cooperative Process

2012 Minute 319

2017 Minute 323

2024 Minute 330



# 2007 Interim Guidelines, Minute 323, Lower Basin Drought Contingency Plan, and Binational Water Scarcity Contingency Plan Total Volumes (kaf)

**Tier 1** →  
2025 Reductions+  
Contributions

**Tier 2a** →

**Tier 2b** →

**Tier 2c** →

**Tier 2d** →

**Tier 2e** →

**Tier 3** →

Lake Mead Elevation (feet msl)	2007 Interim Guidelines Shortages		Minute 323 Delivery Reductions	Total Combined Reductions	DCP Water Savings Contributions			Binational Water Scarcity Contingency Plan Savings	Combined Volumes by Country US: (2007 Interim Guidelines Shortages + DCP Contributions) Mexico: (Minute 323 Delivery Reductions + Binational Water Scarcity Contingency Plan Savings)					Total Combined Volumes
	AZ	NV	Mexico	Lower Basin States + Mexico	AZ	NV	CA	Mexico	AZ Total	NV Total	CA Total	Lower Basin States Total	Mexico Total	Lower Basin States + Mexico
1,090 - 1,075	0	0	0	0	192	8	0	41	192	8	0	200	41	241
1,075 - 1050	320	13	50	383	192	8	0	30	512	21	0	533	80	613
1,050 - 1,045	400	17	70	487	192	8	0	34	592	25	0	617	104	721
1,045 - 1,040	400	17	70	487	240	10	200	76	640	27	200	867	146	1,013
1,040 - 1,035	400	17	70	487	240	10	250	84	640	27	250	917	154	1,071
1,035 - 1,030	400	17	70	487	240	10	300	92	640	27	300	967	162	1,129
1,030 - 1,025	400	17	70	487	240	10	350	101	640	27	350	1,017	171	1,188
<1,025	480	20	125	625	240	10	350	150	720	30	350	1,100	275	1,375

Goal = keep Lake Mead < 1,050 ft.





Thank you. Gracias.