

Colorado River Compact Law, Management, and Challenges

Jennifer Gimbel
Colorado Water Center
Water Literate Leaders
December 7, 2022

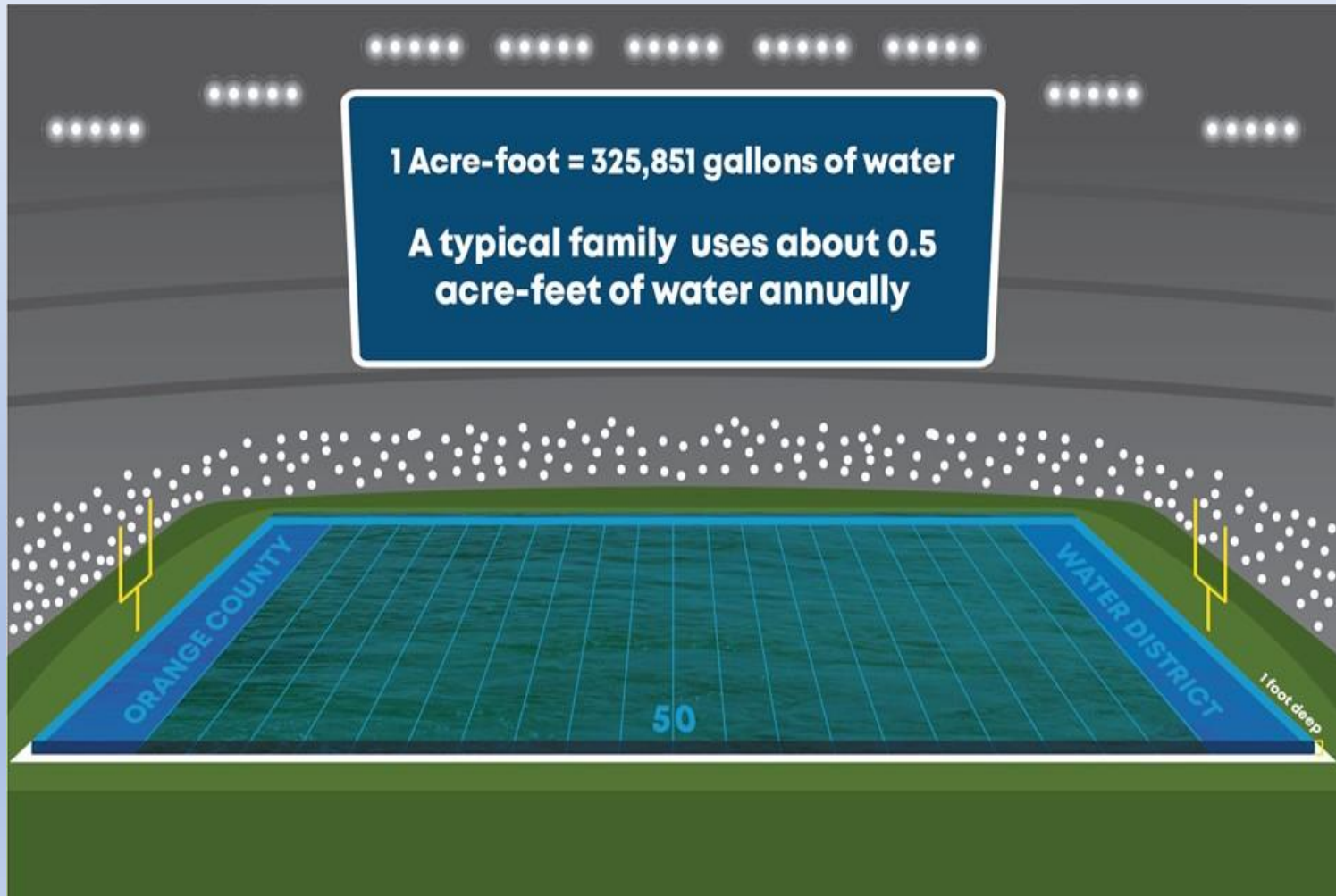
Headwaters of the Colorado River, USGS





Definitions

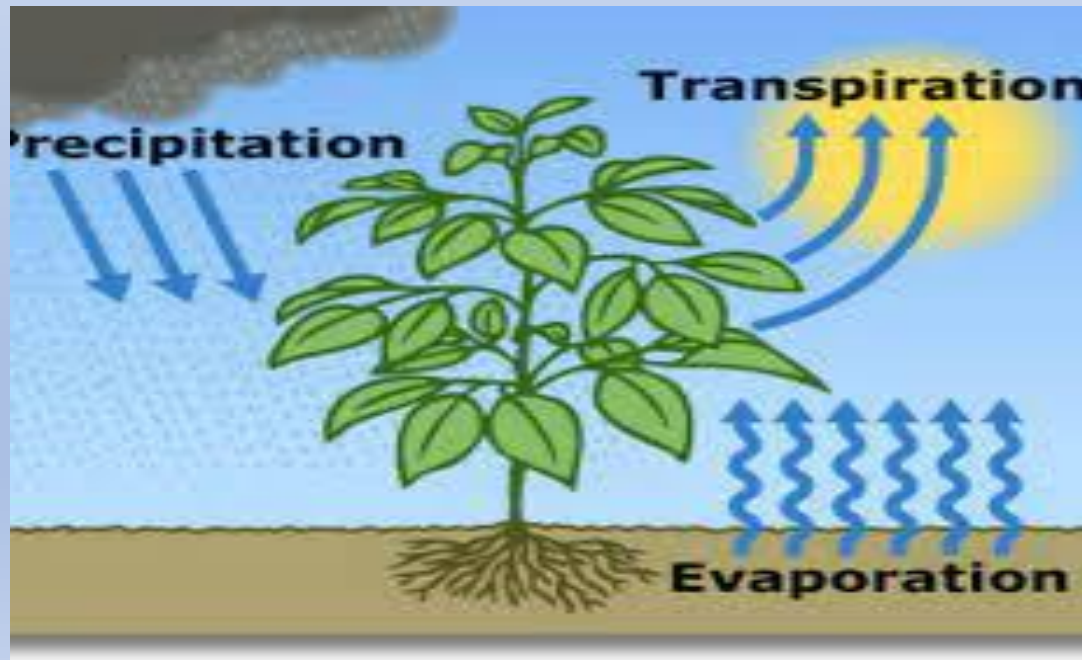
Acre foot of Water



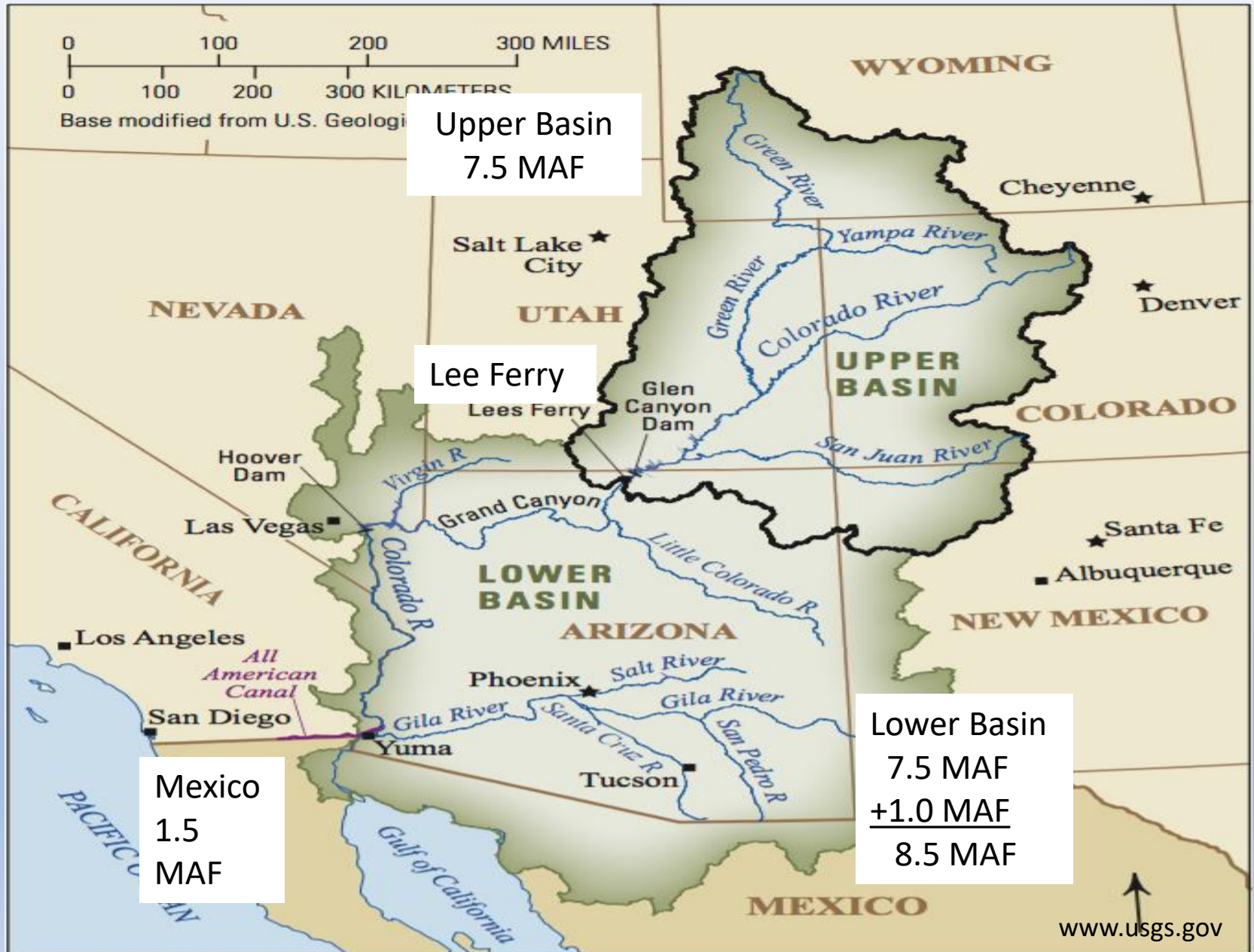
Definitions

Consumptive Use of Water

- Amount of water that is evaporated, transpired, incorporated into products or crops, consumed by humans or livestock, or otherwise not available for immediate use.

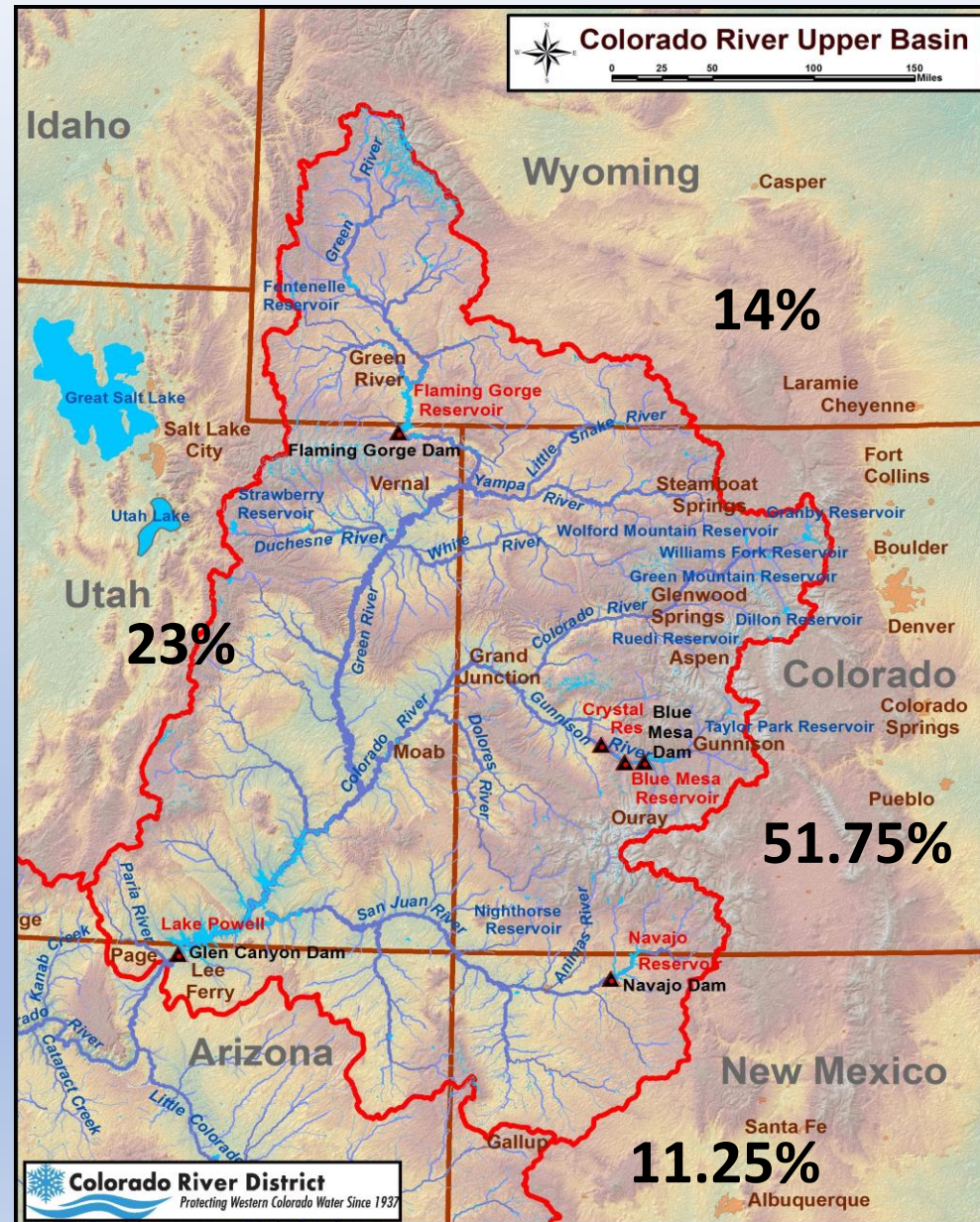


1922 Colorado River Compact & 1946 Treaty with Mexico



Upper Colorado River Compact, 1948

- % Apportionments to CO, NM, UT, WY & 50,000 AF/yr to AZ
- Process for curtailment of use to comply with Colorado River Compact
- Established Upper Colorado River Commission



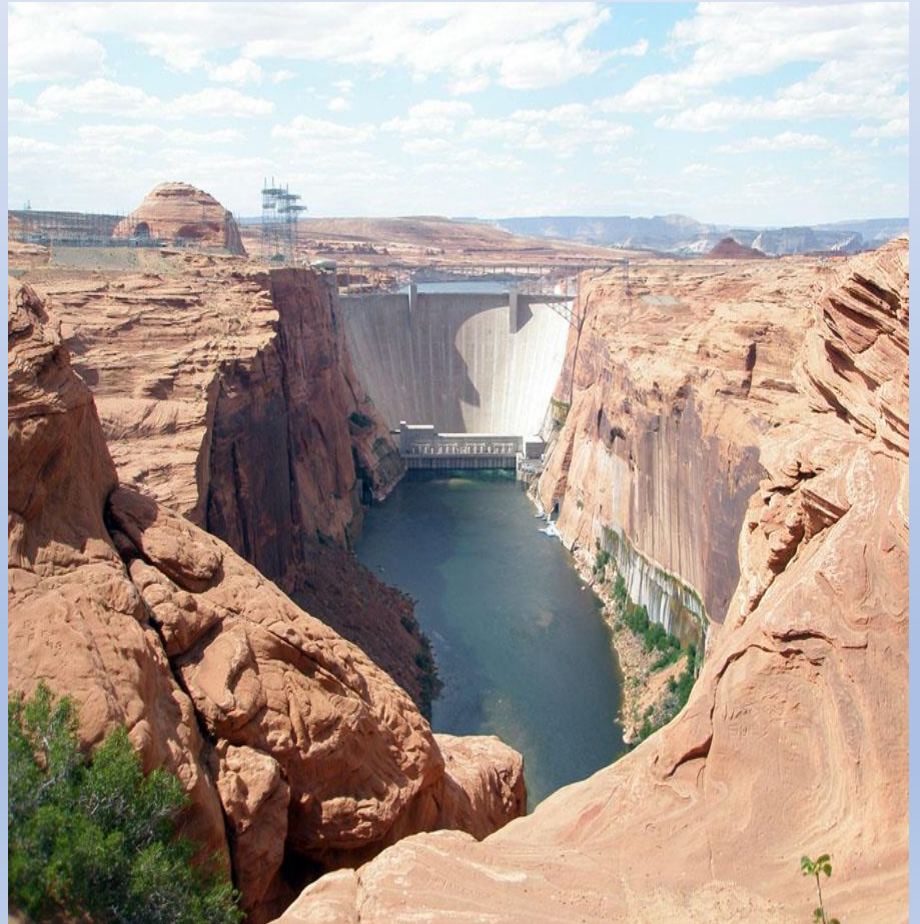
Boulder Canyon Project Act Arizona v. California (1963)



Hoover Dam and Glen Canyon Dam



commons.wikimedia.org



usgs.gov

Colorado River Storage Project

U.S. Bureau of Reclamation
Authorized April 11, 1956

-  CRSP Dam
-  Participating Project

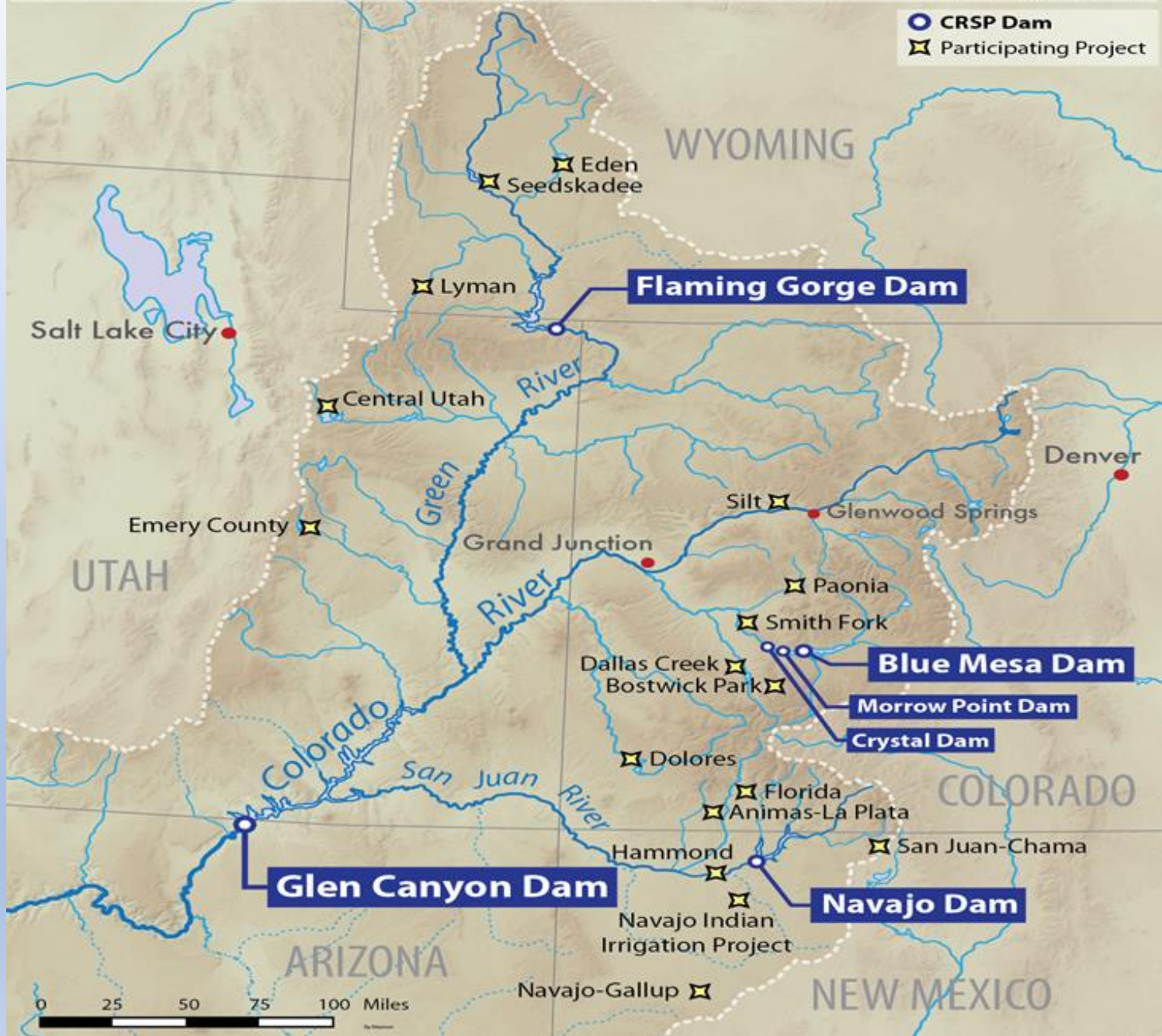


FIGURE 1B-A

Map of Federally Recognized Tribes in the Colorado River Basin



ID	Tribe Name	ID	Tribe Name	ID	Tribe Name	ID	Tribe Name
1	Ute Indian Tribe of the Uintah and Ouray Reservation	9	Havasupai Tribe	15	Chemehuevi Indian Tribe	23	Salt River Pima-Maricopa Indian Community
2	Southern Ute Indian Tribe	10	Hualapai Indian Tribe	16	Colorado River Indian Tribes	24	Gila River Indian Community
3	Ute Mountain Ute Tribe	11	Shivwits Band of Paiute Indian Tribe	17	Yavapai-Apache Nation	25	Ak-Chin Indian Community
4	Jicarilla Apache Nation	12	Moapa Band of Paiute Indians	18	Yavapai-Prescott Indian Tribe	26	Quechan Indian Tribe
5	Navajo Nation	13	Las Vegas Tribe of Paiute Indians	19	Tonto Apache Tribe	27	Cocopah Indian Tribe
6	Zuni Tribe	14	Fort Mojave Indian Tribe	20	White Mountain Apache Tribe	28	Tohono O'odham Nation
7	Hopi Tribe			21	San Carlos Apache Tribe	29	Pascua Yaqui Tribe
8	Kaibab Band of Paiute Indians			22	Fort McDowell Yavapai Nation		

From Drought to Aridification



es 2000-21

Lees Ferry Natural Flows (Water Year, maf) 1906-2021

6-99?

ny 15

y Flow (maf)

C

20

10

5

0

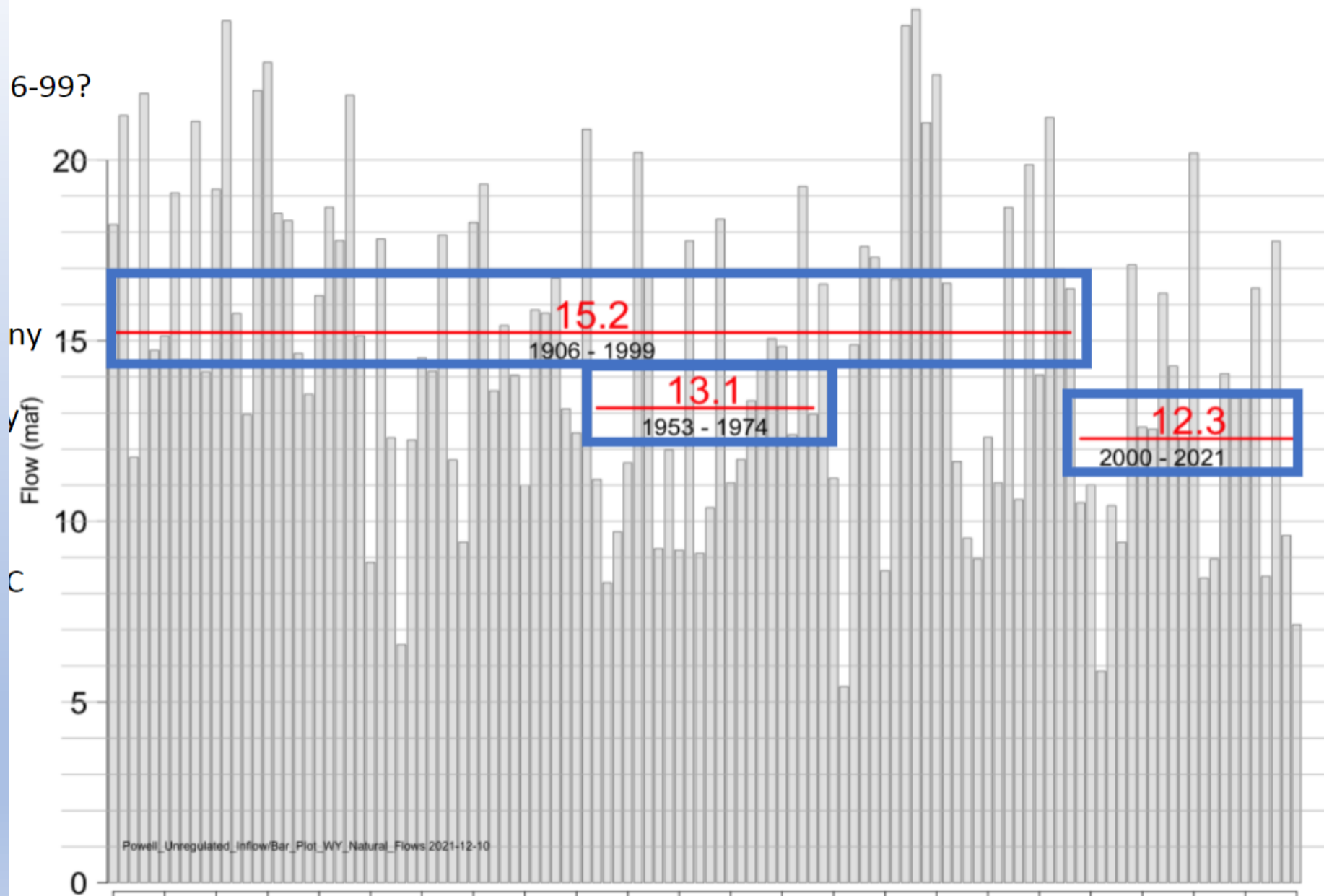
15.2
1906 - 1999

13.1
1953 - 1974

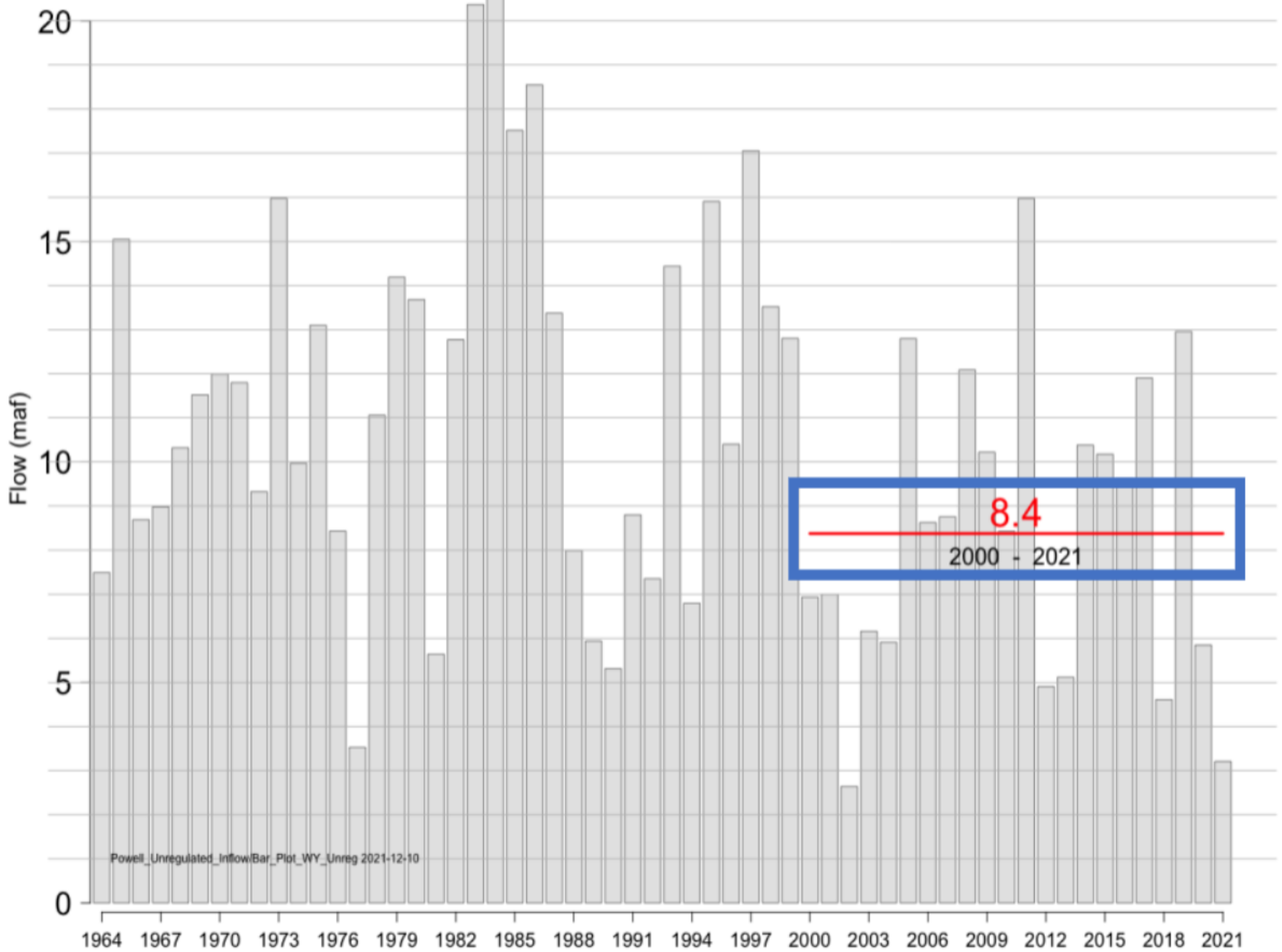
12.3
2000 - 2021

Powell_Unregulated_Inflow/Bar_Plot_WY_Natural_Flows:2021-12-10

1906 1916 1926 1936 1946 1956 1966 1976 1986 1996 2006 2016



Powell Unregulated Inflows (Water Year, maf) 1964-2021

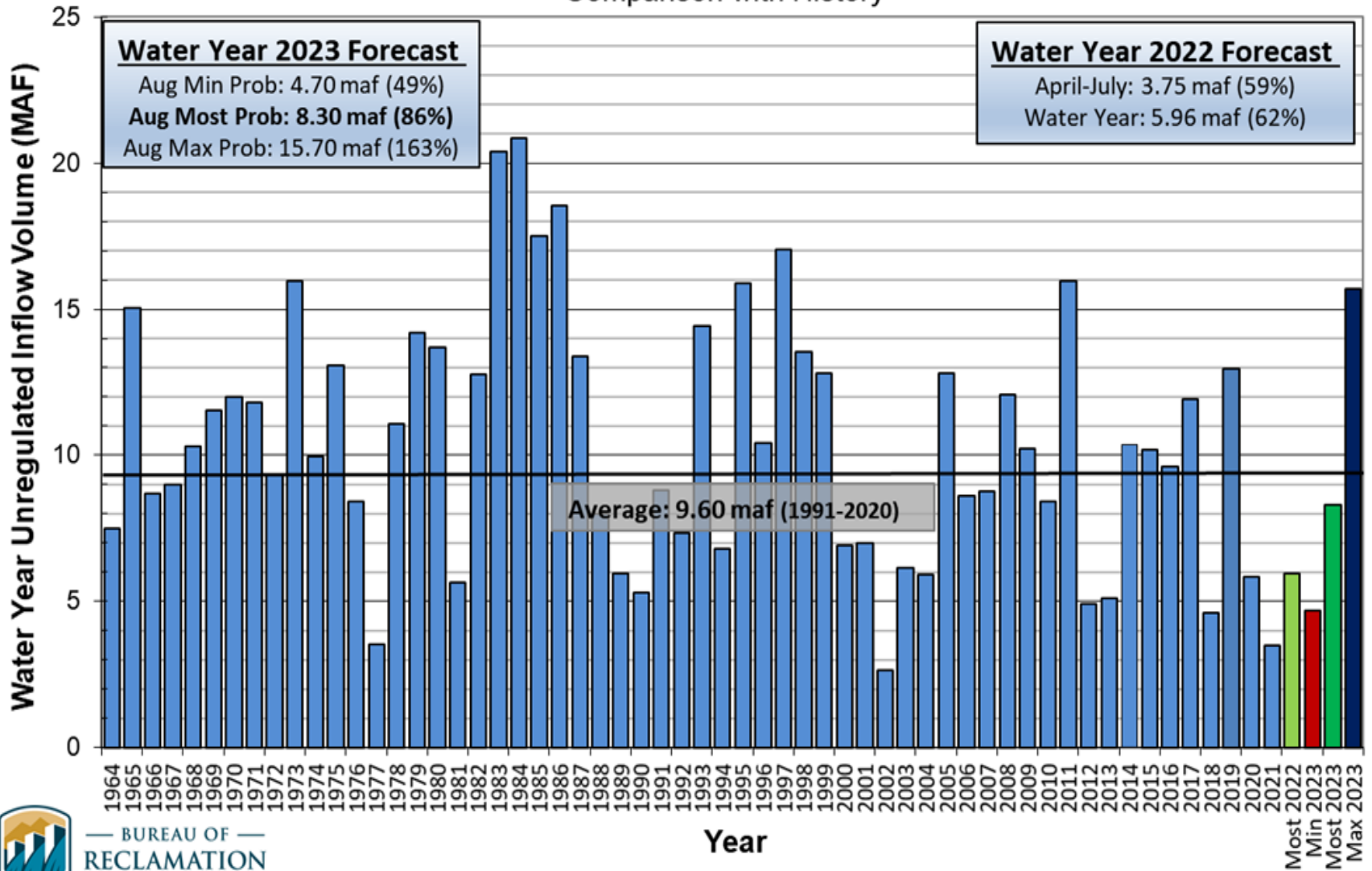


Powell_Unregulated_Inflow/Bar_Plot_WY_Unreg 2021-12-10

Lake Powell Unregulated Inflow

Water Year 2022 and 2023 Forecast *(issued August 2)*

Comparison with History



BUREAU OF RECLAMATION

Managing the Colorado River During Drought

2007 Interim Guidelines

- Criteria for shortages in the Lower Basin
- Intentionally created surplus (water bank)
- Coordinated operations of Lakes Powell and Mead
- Expires in 2026



— BUREAU OF —
RECLAMATION

Review of the Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead

Upper and Lower Colorado Basin Regions



2019 Drought Contingency Plans

Lower Basin DCP

- Increased shortage provisions
- Incentives to bank in Mead
- Recognizes need to address LB overuse



Upper Basin DCP

- Drought response operations agreement
- Demand management storage agreement
- Weather modification



International Cooperation



- Minute 319:
 - Mexico agrees to share in shortage;
 - U.S agrees to share in surplus;
 - International environmental projects including experimental pulse release to move water to the Lower Colorado River in Mexico.
- Minute 323:
 - Mexico agrees to further shortage

Stressed Colorado River System

- Aridification
- Lower Basin overuse
 - Average outflow at Lake Mead 9.6 maf, but 10 maf in 2021 and 9.9 in 2022
 - Upper Basin uses average 4.5 maf, but 3.5 maf in 2021
- Structural concerns at Glen Canyon Dam
- Water delivery to two municipalities
- Nearing power pool and threat of not generating power

Lake Powell

3,700 ft[†]
(Full pool)

Glen
Canyon
Dam

The target elevation of 3,525 ft provides Lake Powell with a 35-vertical-foot buffer designed to minimize the risk of dropping below the minimum power pool elevation of 3,490 ft.

3,525 ft

35 feet

3,490 ft

Power pool
(No longer able to use water to produce power)

3,370 ft

Dead pool
(No longer able to deliver water to Lower Colorado River Basin through dam)

† Feet above sea level
* As of March 15, 2022



BUREAU OF
RECLAMATION

Drought Operation Releases



Blue Mesa, cpr.org



Department of the Interior Announcement: State Must Reduce Use by 2-4 maf



Secretary Declares Shortages for Lower Basin



In 2022 Arizona, Nevada and Mexico saw cuts to water deliveries by 613,000 acre-feet

The Washington Post

In 2023, deeper cuts of 721,000 acre-feet

U.S. announces more water cuts as Colorado River hits dire lows

Upper Basin Response

- Development of inter- and intrastate management plans
- Reauthorization of System Conservation Program
- Investment in improved monitoring and reporting infrastructure
- Encouragement of strict water management and administration
- Development of a 2023 Drought Response Operations plan

Lower Basin Response



Congress to the Rescue!

Money

to

Uphill

Flows

Water



\$4 billion of drought relief with priority to
Colorado River

Pledge from Basin Municipalities to Conserve Even More

- Aurora Water
- Colorado Springs Utilities
- Denver Water Metropolitan Water District of Southern California
- Pueblo Water Southeastern Colorado Water Conservancy District
- Southern Nevada Water Authority

Interior Announcement

Sept. 22

- Consider reducing flows out of Powell beyond what required by Interim Guidelines
- Implement emergency drought operations
- Account for and allocate evaporation, seepage and other losses in Lower Basin
- Look to States to decrease uses

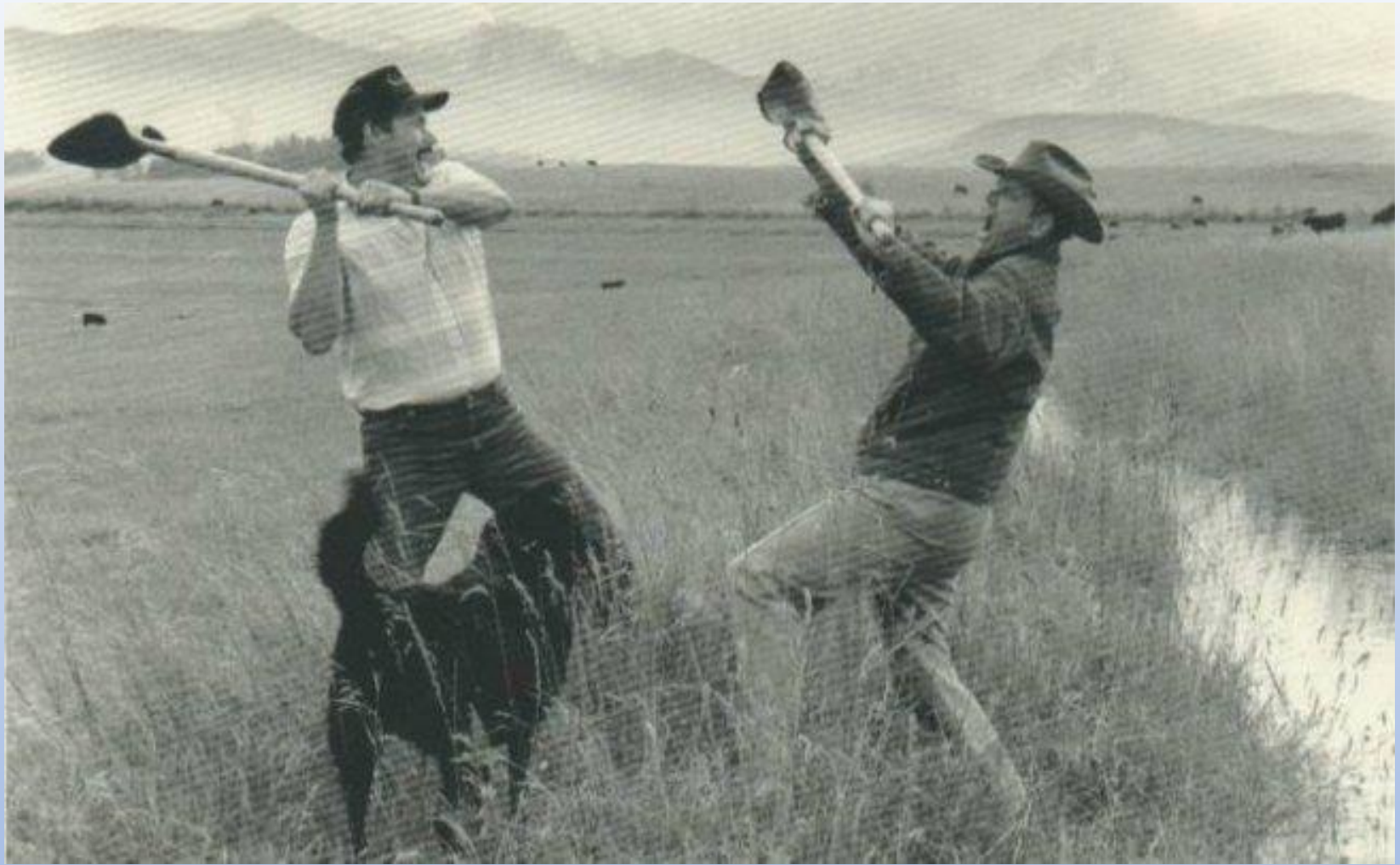
Another Announcement

October

- No Action Alternative: Operate under existing law and agreements
- Framework Agreement Alternative: Additional consensus-based actions developed by the Basin States, Basin Tribes, and non-governmental organizations.
- Reservoir Operations Modification Alternative: A set of “actions and measures” developed by Reclamation and “adopted pursuant to Secretarial authority under applicable federal law.”

FAQ

- What happens if UB doesn't meet 75maf/10 years?
Can the Lower Basin put a call on the River?
- Is the Upper Basin responsible for risks from climate change?
- What is the structural deficit and how did it happen?
- Do we need to change the Compacts?
- How do the Tribes on the River figure into all this?
- What about demand management discussions?
- How does all this affect Northern Colorado?



Questions?