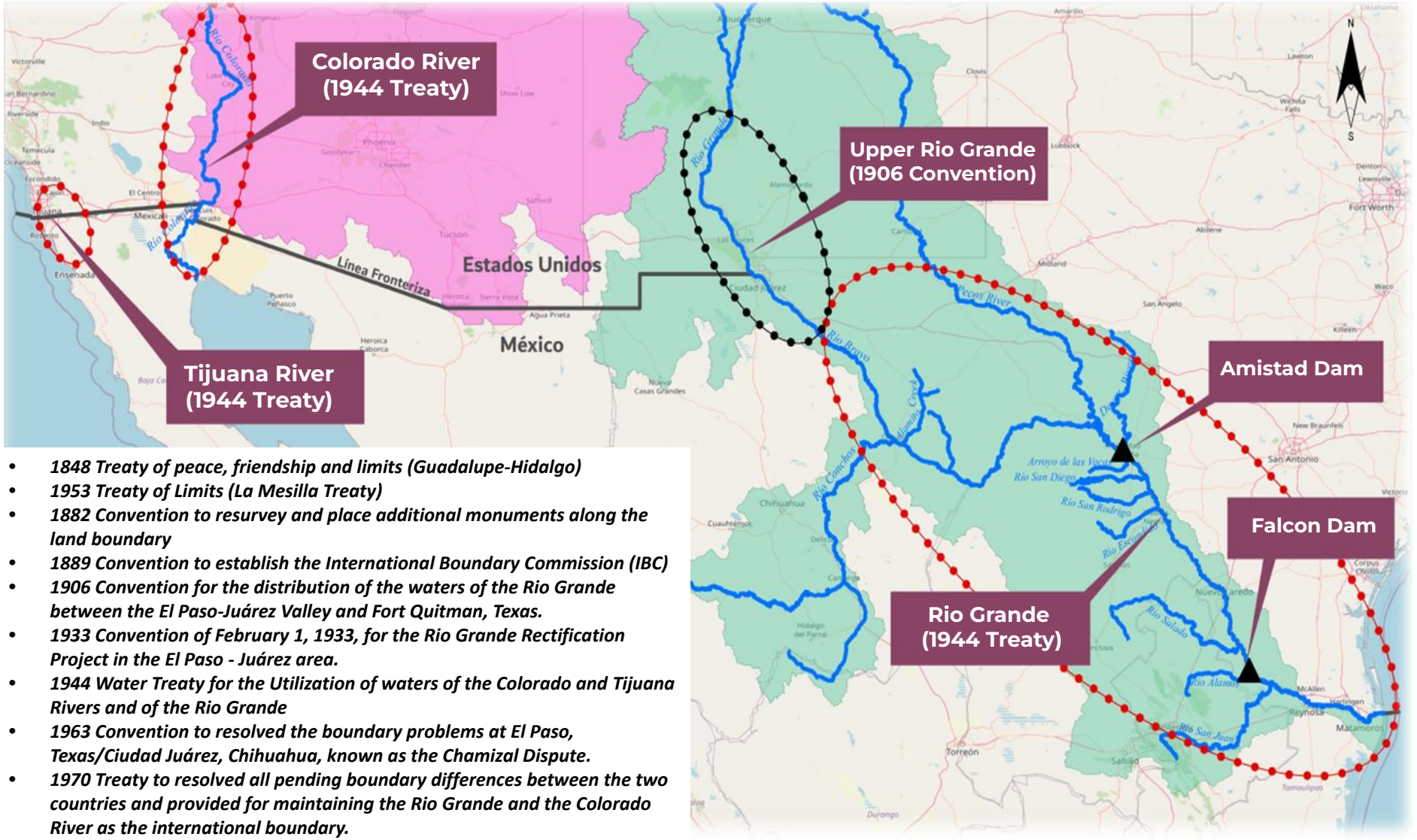
Climate change impacts on the Bravo/Grande river and Colorado river basins, at the Mexico-United States of America border region

- INBO World Basin Summit
- 16-19 June 2026 - Rio de Janeiro, Brazil

Session 4 - CLIMATE ADAPTATION
Climate change adaptation at basin level: controlling floods and droughts

Accouting and management of the international waters

COMISIÓN INTERNACIONAL DE LÍMITES Y AGUAS ENTRE MÉXICO Y ESTADOS UNIDOS



- *1848 Treaty of peace, friendship and limits (Guadalupe-Hidalgo)*
- *1953 Treaty of Limits (La Mesilla Treaty)*
- *1882 Convention to resurvey and place additional monuments along the land boundary*
- *1889 Convention to establish the International Boundary Commission (IBC)*
- *1906 Convention for the distribution of the waters of the Rio Grande between the El Paso-Juárez Valley and Fort Quitman, Texas.*
- *1933 Convention of February 1, 1933, for the Rio Grande Rectification Project in the El Paso - Juárez area.*
- *1944 Water Treaty for the Utilization of waters of the Colorado and Tijuana Rivers and of the Rio Grande*
- *1963 Convention to resolved the boundary problems at El Paso, Texas/Ciudad Juárez, Chihuahua, known as the Chamizal Dispute.*
- *1970 Treaty to resolved all pending boundary differences between the two countries and provided for maintaining the Rio Grande and the Colorado River as the international boundary.*

Upper Bravo/Grande River

1906 Convention Deliveries

USA → México

74 MCM annually

Bravo/Grande River

1944 Water Treaty Allocations

México → USA

2,158 Mm^3

In cycles of five years

(431.7 MCM annually)

Colorado River

1944 Water Treaty Allocations

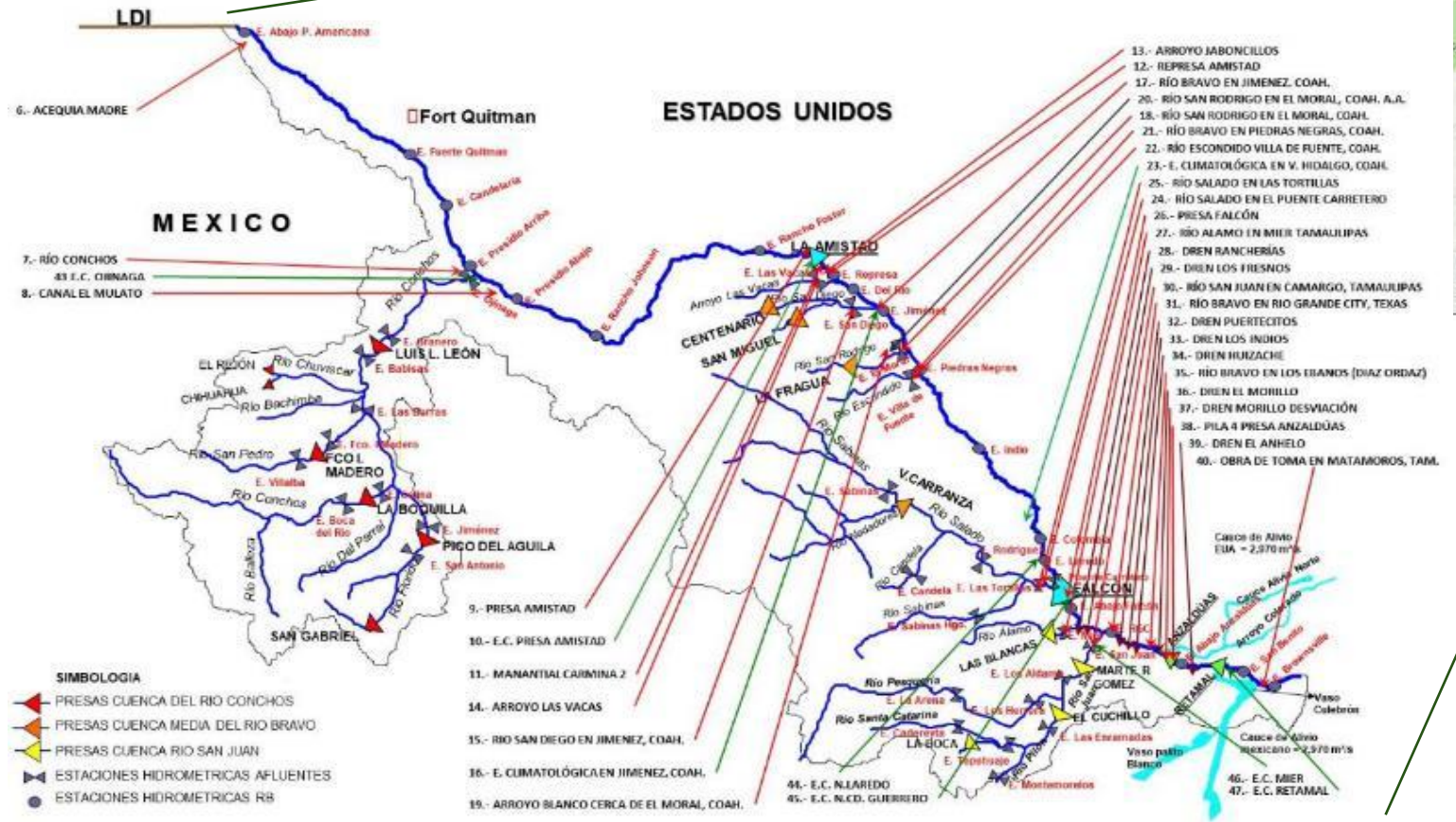
USA → México

1,850 MCM annually

Surface Water.
Gaging Stations Network

River	# of Stations
Bravo/Grande river	**53**
Colorado river	**10**
Tijuana river	**3**
Total	**66**

Gaging Station



Historic runoff in the Bravo/Grande river

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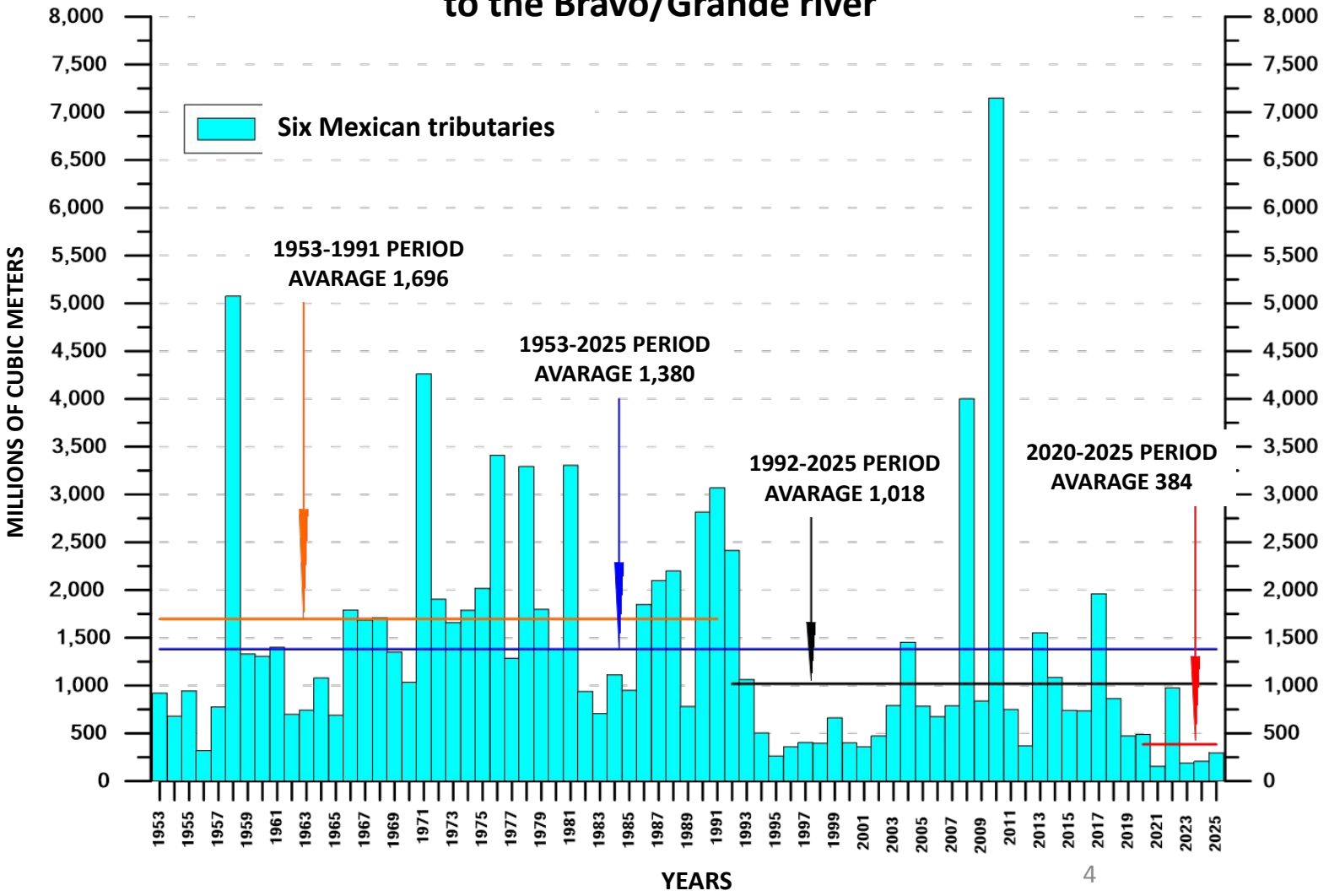
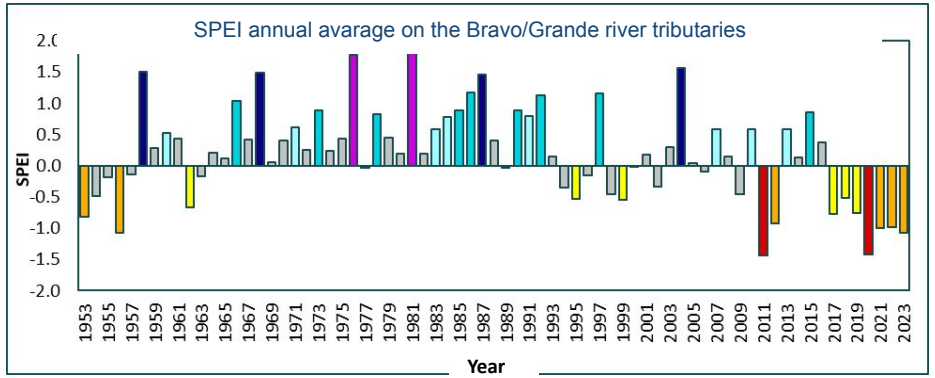


Hydrological drought

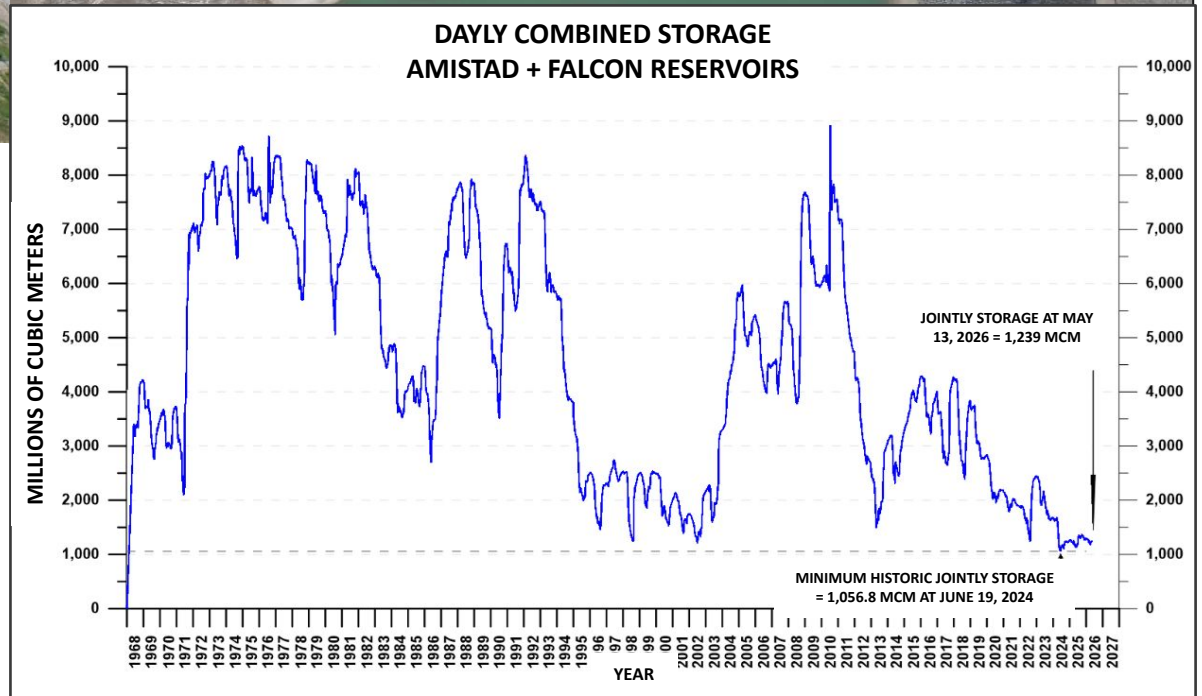
Since 1992, a decrease in water availability has been observed in water resources such as the Conchos River in Chihuahua, Mexico.

- Lack of rainfall (meteorological drought)
- Increased demand

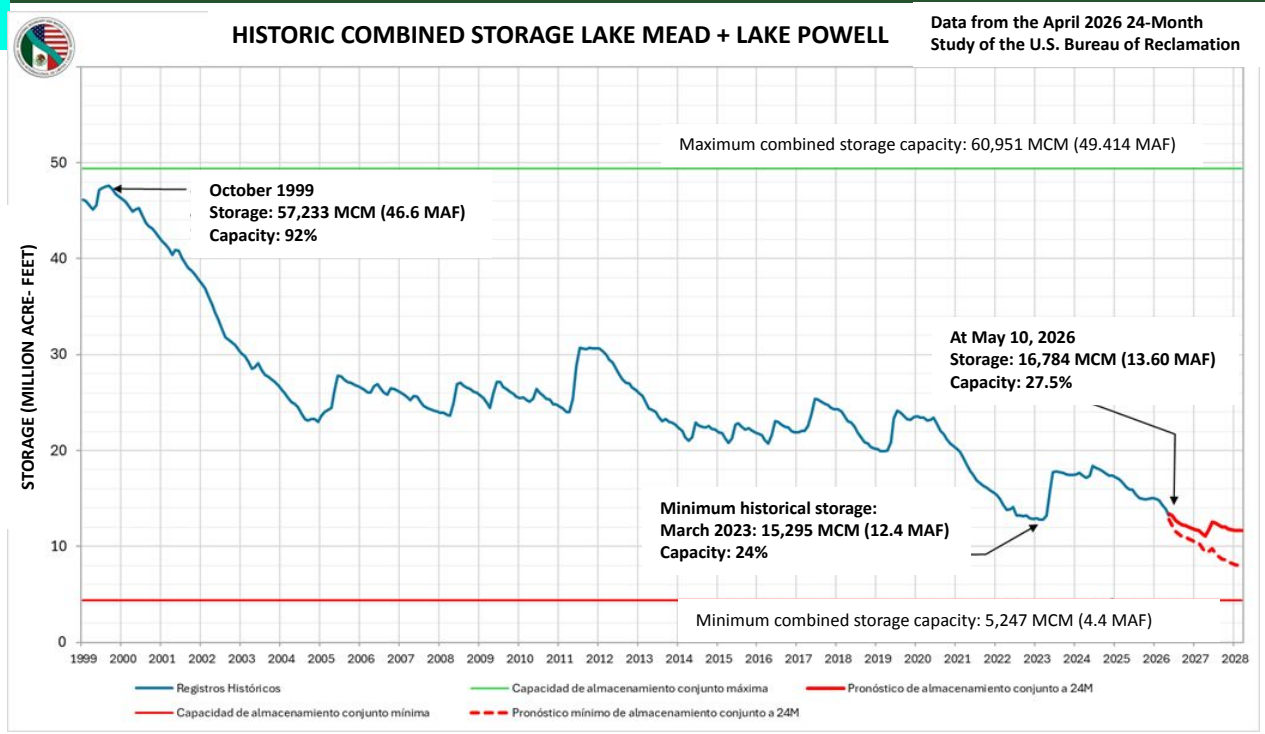


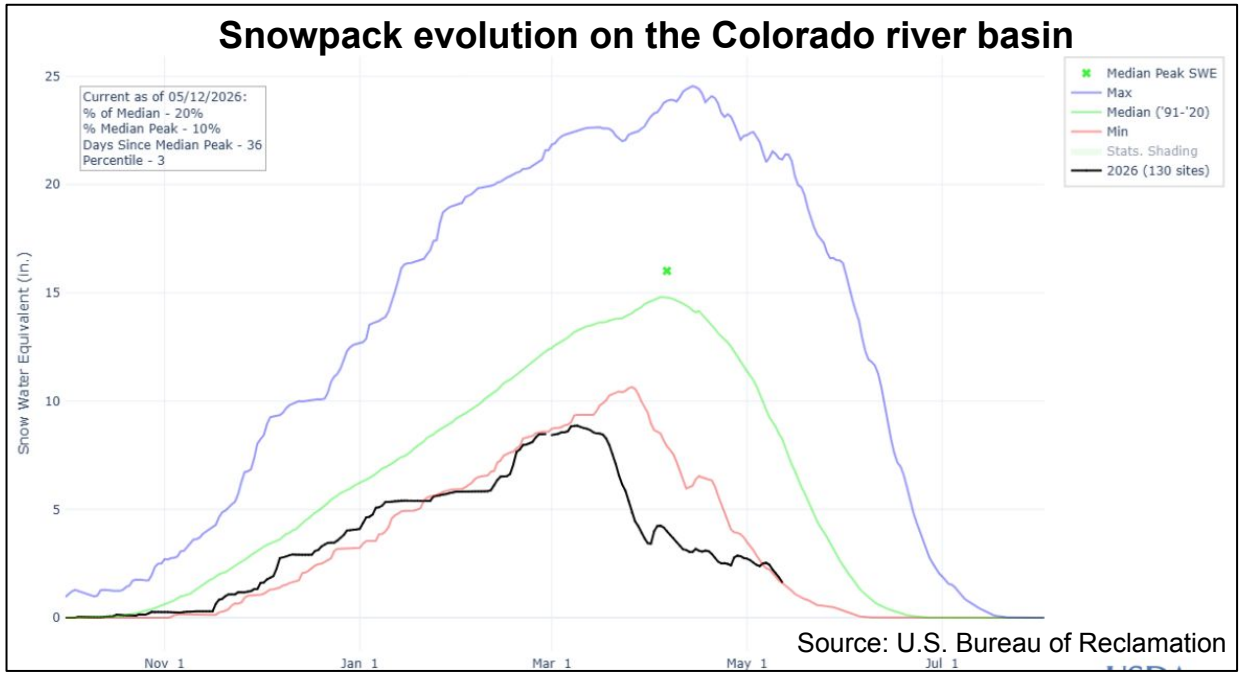
Standardized Precipitation-Evapotranspiration Index (SPEI)

International Reservoirs storages



Colorado River Basin

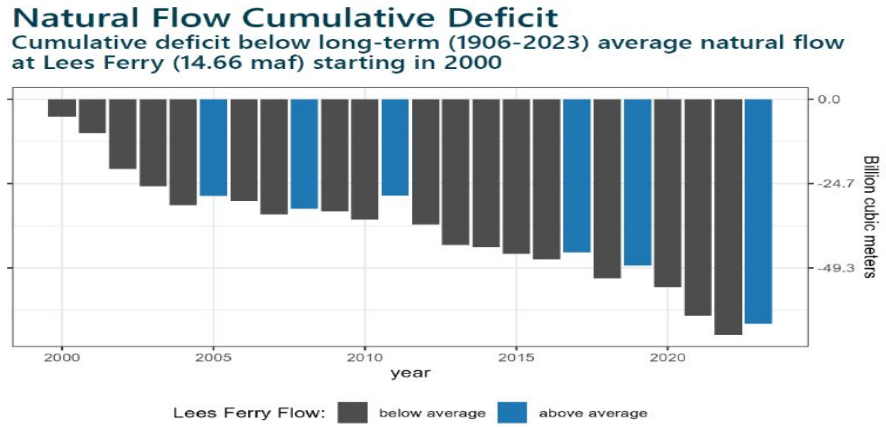




Source: U.S. Bureau of Reclamation

Current basin conditions

- Drought since 2000, the longest in the historical record period.
- In April 2026, the basin recorded a historically low snowpack (**21% of its average**).
- This was the worst snowpack since 1987, which could lead to the basin's main lakes, Powell and Mead, reaching critical levels by July 2026.



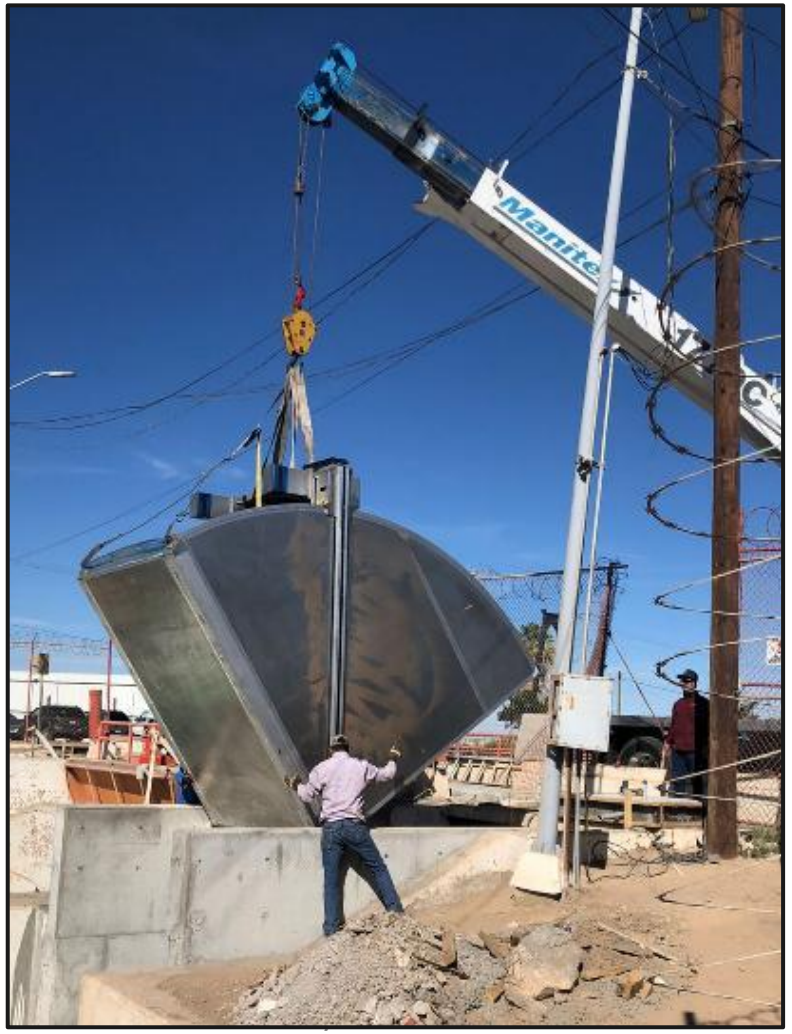
Source: U.S. Bureau of Reclamation

Colorado River Basin

Comisión Internacional de Límites y Aguas entre México y Estados Unidos

Adaptation measures to climate change and drought

Mexico and the United States of America adopted international cooperation measures through IBWC Minutes 306, 317, 318, 319, 323 and 330, to address the drought and scarcity conditions in the Colorado River Basin.



Main challenges in the Mexico-United States of America border region

Faced with drought and scarcity conditions

- Working on the modernization and technification of irrigation districts
- Water reuse
- Financing
- Water supply and sanitation are human rights
- Water measurement
- Mathematical models
- Exchange of information
- Impacts of drought
  - Availability reduced
  - Impact on water quality