

# EVERYTHING IS CONNECTED

Why Mexico's Problems Are  
Everyone's Problems on the Colorado  
River, and the Other Way Around

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# Colorado River Basin





# COLORADO RIVER BASIN

## LIFELINE FOR AN ARID LAND

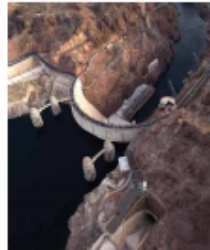
NATIONAL GEOGRAPHIC

An iconic river of arid lands flowing from high-altitude mountains to below-sea-level desert sustains the Southwestern United States. From megaplains to microscopic, the Colorado River is life itself. A stunning diversity of imperiled flora and fauna cling to the riparian corridor as the river runs from high-altitude pine forests and high basins ponds down through deep canyons and desert oases and broadleaf habitats. The water springs from snow-capped mountains, including the major tributaries: the Green, Gunnison, San Juan, Yampa, and Gila Rivers. From the mountainous plains of northern Wyoming to the arid Sonoran Desert of northern Mexico, over three million acres of farmland depend upon this living resource to produce valuable crops. The Colorado River is diverted, under pumps and through levees, without the subsidies that create hydroelectricity, and stored by dams to supply the needs of 30 million people inside of and surrounding the Basin—some of the most crowded, irrigated, and carefully controlled rivers on Earth. Considered a monument to the wisdom of nature and human engineering, the Colorado River faces growing challenges associated with increasing population, depleting ecosystems, drought, and expected climate change.



### CONTROLLING THE RIVER

The U.S. Bureau of Reclamation's Bureau of the Colorado River is the primary agency responsible for the river's management. The Bureau's mission is to ensure the river's health and sustainability, which includes managing the river's flow, water quality, and ecosystem health. The Bureau also manages the river's infrastructure, including dams, levees, and canals. The Bureau's work is critical to the region's economy and environment, as the river is a vital source of water for millions of people and millions of acres of farmland.



### IMPERILED RIVER SPECIES

The river's flow and the health of the Colorado River Basin are critical to the survival of many species. The river's flow is regulated by dams and levees, which can disrupt the natural flow of the river and the habitats of many species. The river's water quality is also a concern, as pollution and sedimentation can harm many species. The river's ecosystem is also under threat from climate change, which is expected to reduce the river's flow and increase the frequency of droughts.

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### The River's Journey

Regulated by the Bureau of Reclamation, the Colorado River is the lifeblood of the Southwestern United States. The river's journey begins in the high-altitude mountains of the Rocky Mountains, where it is formed by the confluence of the Green, Gunnison, San Juan, Yampa, and Gila Rivers. The river then flows through the arid landscape of the Southwestern United States, where it is regulated by a series of dams and levees. The river's water is used for a variety of purposes, including irrigation, hydroelectricity, and municipal water supply. The river's journey ends in the Gulf of California, where it empties into the sea.

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Source: Bureau of Reclamation, U.S. Department of the Interior. The map shows the river's course from the Rocky Mountains in the west to the Gulf of California in the south. The map includes state and national boundaries, major cities, and a legend for various features like dams, levees, and water quality. It also shows the river's tributaries and the surrounding landscape, including the Sonoran Desert and the Gulf of California.

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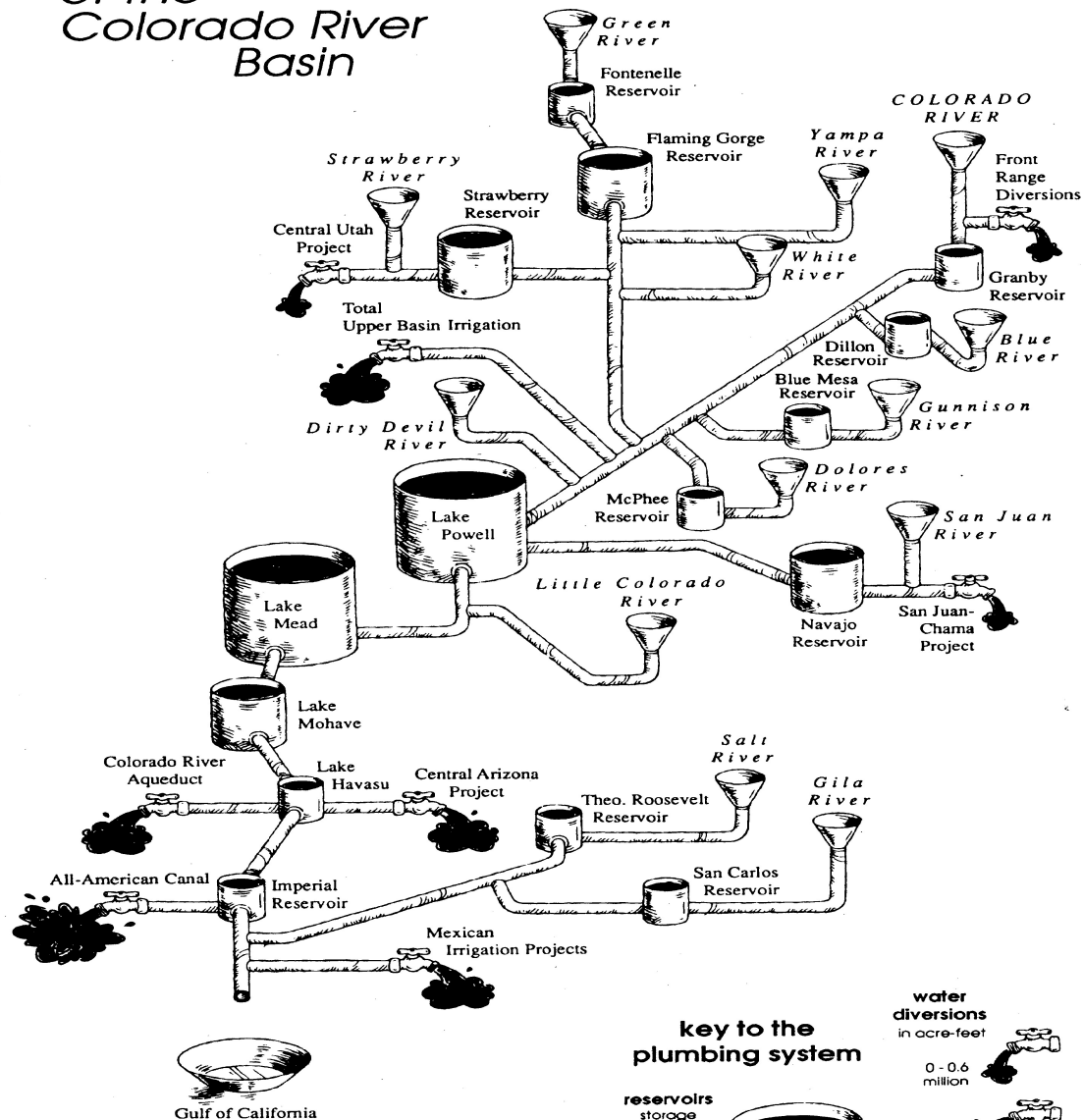
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# the plumbing of the Colorado River Basin



Clint McKnight,  
based on art by Lester Doré,  
High Country News



# Colorado River Compact

- ▣ Allocates water among Upper Basin and Lower Basin
  - 7.5 maf for each basin
  - Extra 1 maf for lower basin
- ▣ Supplies Mexico first from surplus above total apportionment to upper and lower basins
  - If surplus insufficient to supply Mexico, then Mexico's share supplied equally by upper and lower basins
- ▣ Upper division states "shall not cause" flow to lower basin to be less than 75 maf in 10 years

# U.S.-Mexico Treaty

- ▣ Guarantees 1.5 maf annual delivery to Mexico
  - Allows 1.7 maf when there is surplus in excess of US needs
- ▣ Allows reduction of U.S. deliveries to Mexico in case of “extraordinary drought”
  - In the same proportion as consumptive uses in U.S. are curtailed
- ▣ “Extraordinary drought” not defined

# 2007 Interim Guidelines

- ▣ Specifies curtailments of Lower Basin deliveries triggered by elevations in Lake Mead
  - Elevation 1075 – 333,000 acre feet
  - Elevation 1050 – 417,000 acre feet
  - Elevation 1025 – 500,000 acre feet
- ▣ Coordinates operations of Powell and Mead and triggers releases from Powell based on elevation of both lakes
  - Improves drought management in both basins
  - Makes Upper Basin and Lower Basin wholly interdependent
- ▣ ICS allows “augmentation” through conservation and other measures

# Colorado River System Stresses

- ▣ 1922 Compact over allocates the River
- ▣ Uses in LB at or above apportionment; UB uses increasing
- ▣ Climate change increases probability of low flows and low lake levels
- ▣ Shortages/management/conservation in Lower Basin directly affects Lake Powell
- ▣ Mexico uses, conservation, and shortage management will directly affect all US reaches of River



# Voluntary Shortage and Storage Agreement Between U.S. and Mexico

- ▣ Everyone could benefit from increased international cooperation
- ▣ Current uncertainty about how shortage will be managed can be reduced
- ▣ Use of US reservoirs to store water for use in Mexico will help Mexico manage shortage
- ▣ Storage of Mexican water can help increase levels in Mead, and thus Powell
- ▣ Mexican participation in ICS can help augment supply in US