

CONGRESS AND THE COLORADO River



Los Angeles

San Diego

A LOWER BASIN PERSPECTIVE



OVERVIEW

of the METROPOLITAN WATER DISTRICT

- 5,200 Square Miles Service Area
- 19 Million People Served
- 4 Million Acre Feet of Water Demand
- MWD Provides Half of Demand
- 900,000 Acre Feet from Sacramento River
- 1 Million Acre Feet from Colorado River

Los Angeles

San Diego

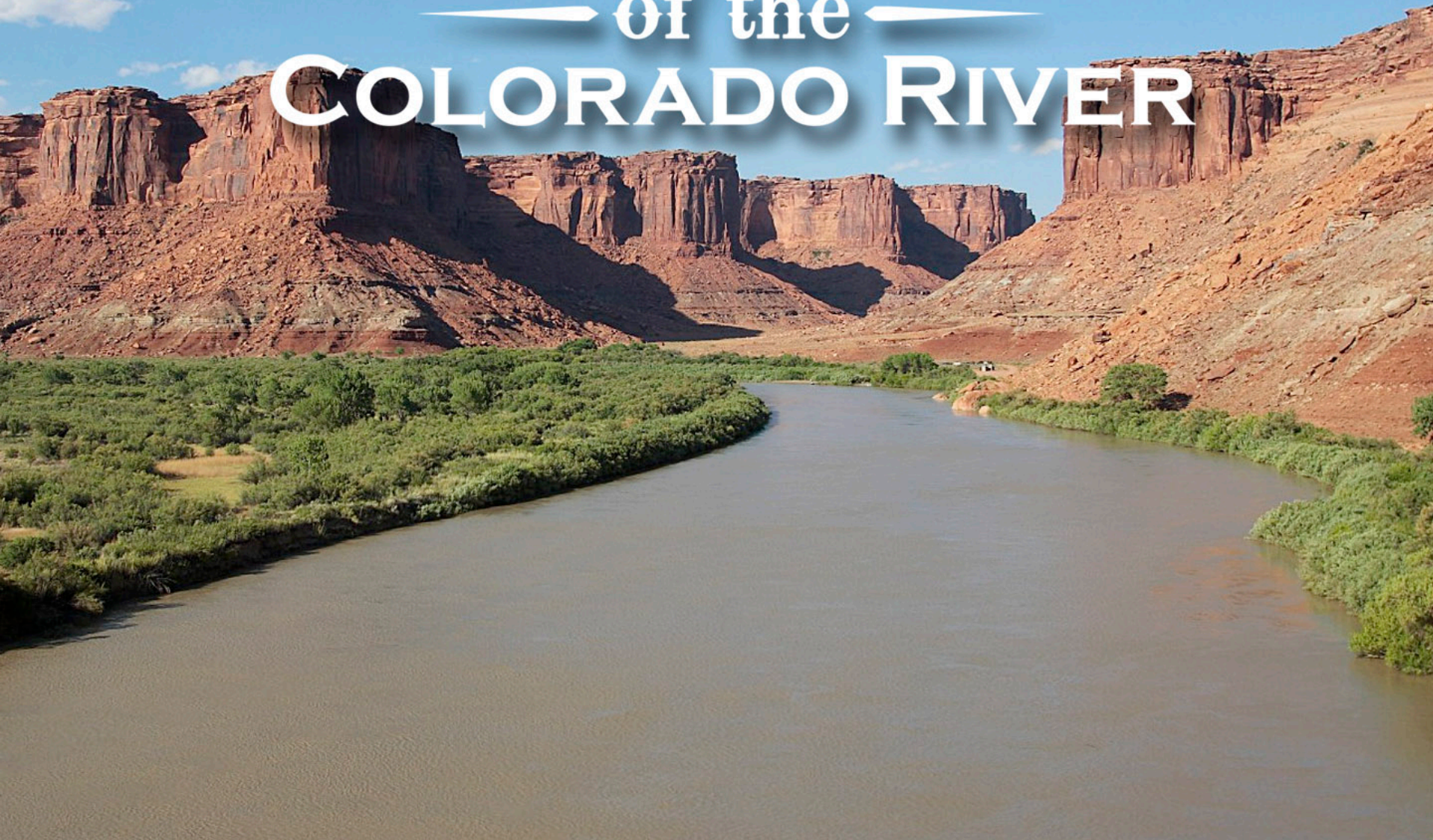
Colorado

Colorado

OVERVIEW

— of the —

COLORADO RIVER



OVERVIEW

— of the —

COLORADO RIVER

A River Subject to More Change Than Any Other



OVERVIEW

— of the —

COLORADO RIVER

The Colorado River flows through the harshest land in America



OVERVIEW

— of the —

COLORADO RIVER

The Colorado River flows through Seven States



OVERVIEW

— of the —

COLORADO RIVER

- Provides Water to 40 Million People in Two Countries
- Provides Water to 5.5 Million Acres of Farmland
- Crosses Through:
 - 22 Native American Tribal Lands
 - 11 National Parks
 - 7 Wildlife Refuges
 - 4 Recreation Areas

LEES

Ferry



OVERVIEW

— of the — UPPER AND LOWER BASINS

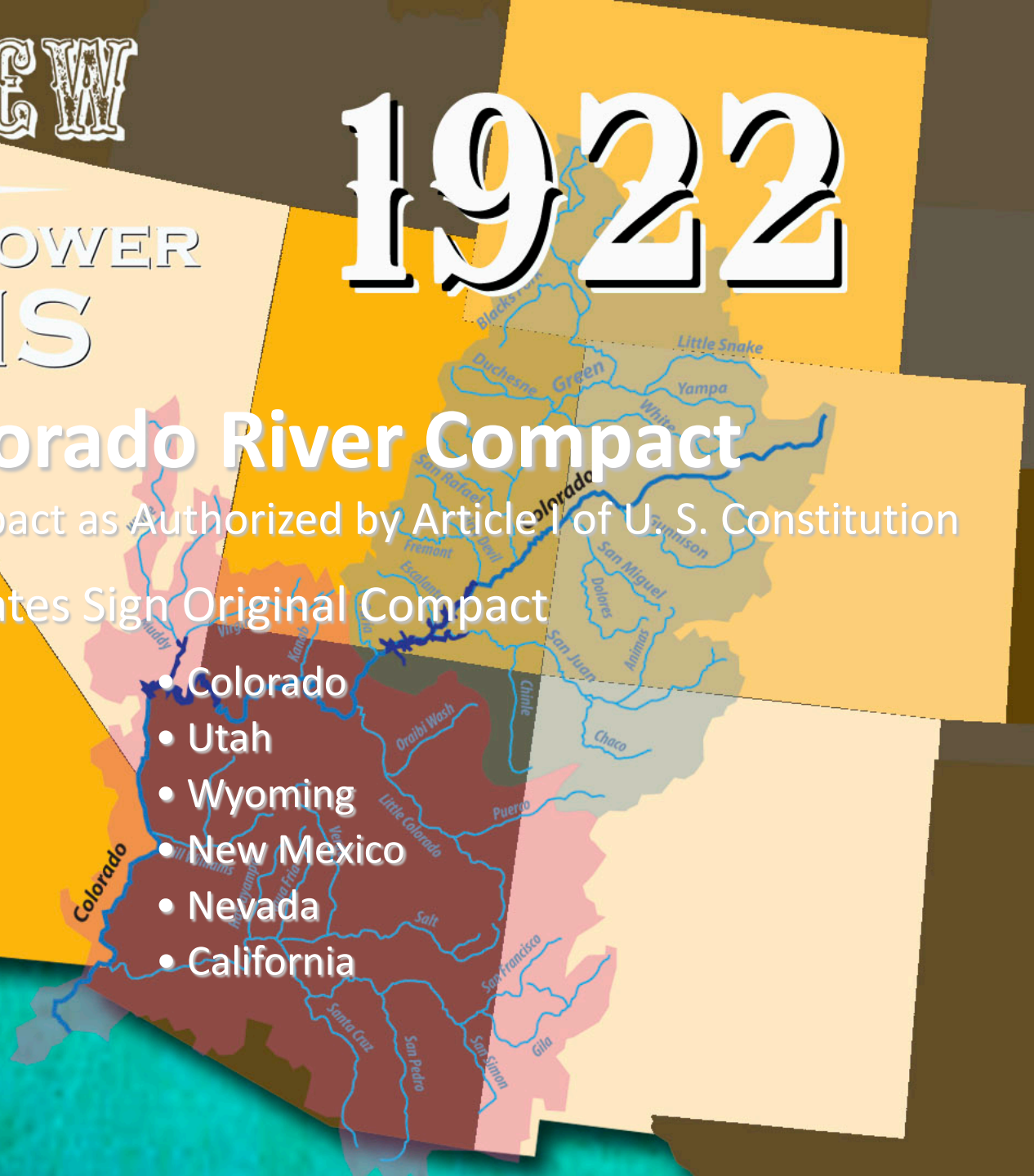
1922

Colorado River Compact

Largest Interstate Compact as Authorized by Article I of U. S. Constitution

Six States Sign Original Compact

- Colorado
- Utah
- Wyoming
- New Mexico
- Nevada
- California



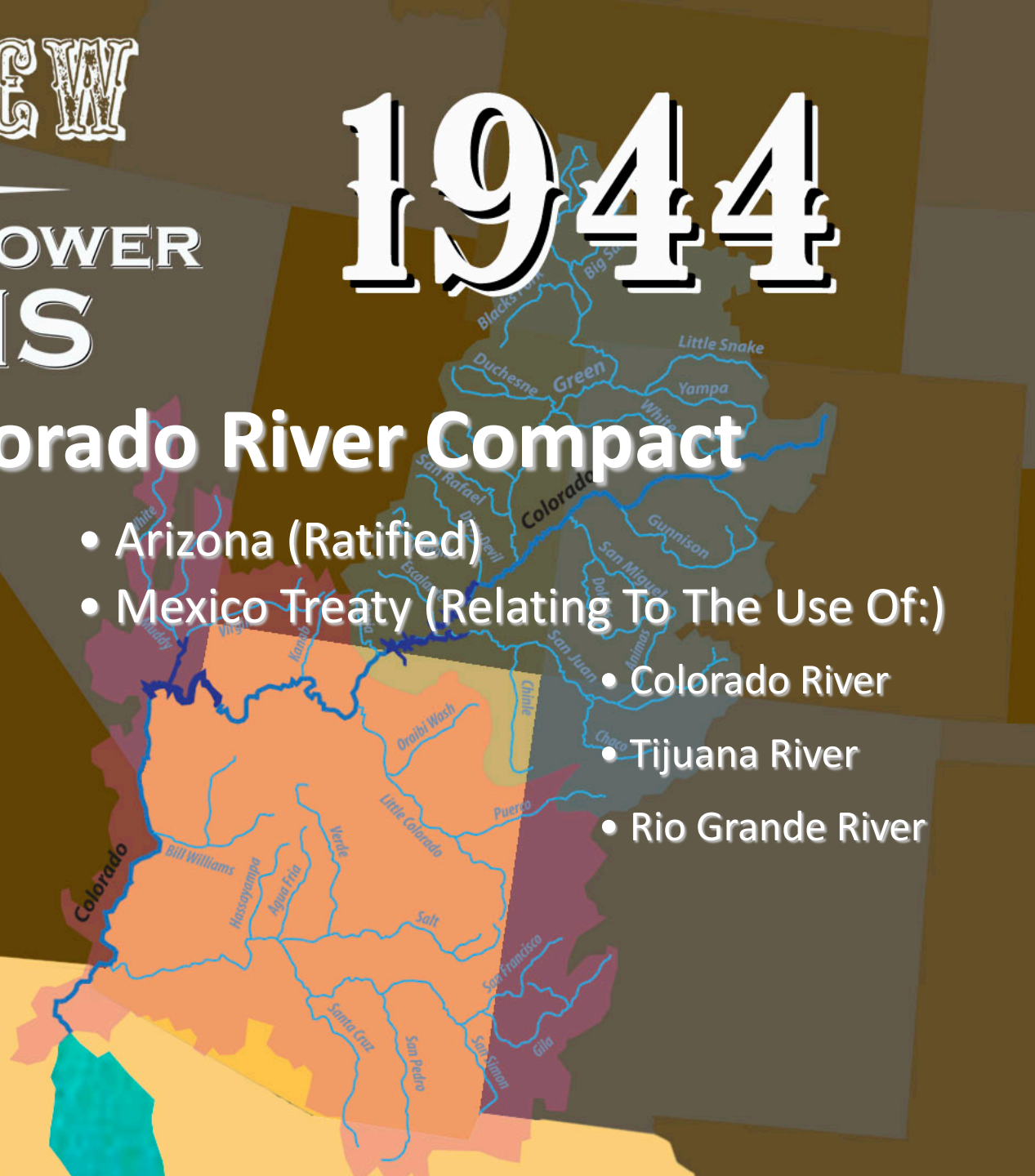
OVERVIEW

— of the — UPPER AND LOWER BASINS

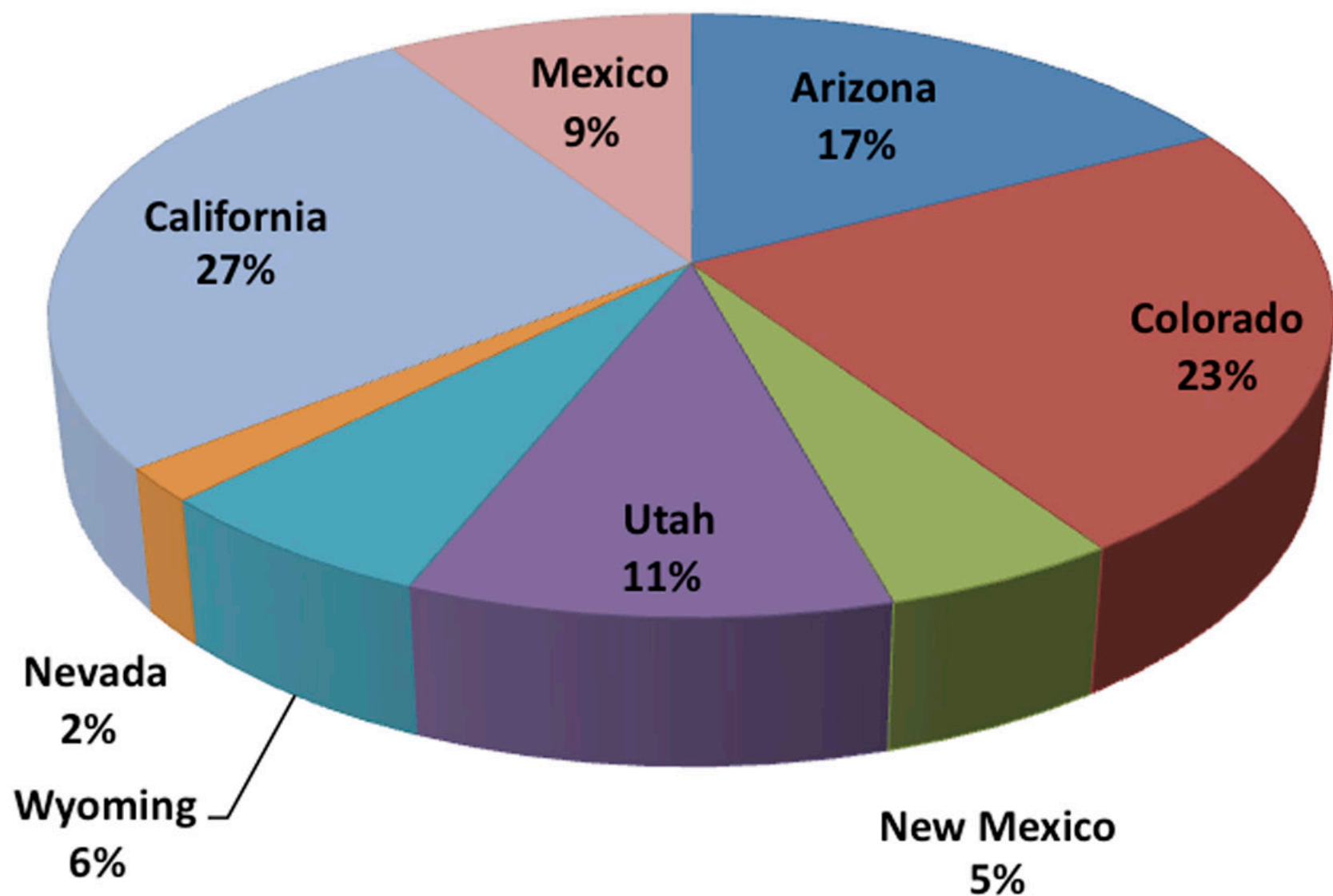
1944

Colorado River Compact

- Arizona (Ratified)
- Mexico Treaty (Relating To The Use Of:)
 - Colorado River
 - Tijuana River
 - Rio Grande River



Colorado River Apportionment



OVERVIEW

— of the —

UPPER AND LOWER BASINS

1928

- Decided to Control the Mighty Colorado River
- Allow for Development of Water Supplies:
 - Central Arizona
 - Southern Nevada
 - Southern California
- Allowed for Development of Irrigation:
 - Imperial Valley
 - Coachella Valley
 - Yuma Area
 - Palo Verde Valley



OVERVIEW

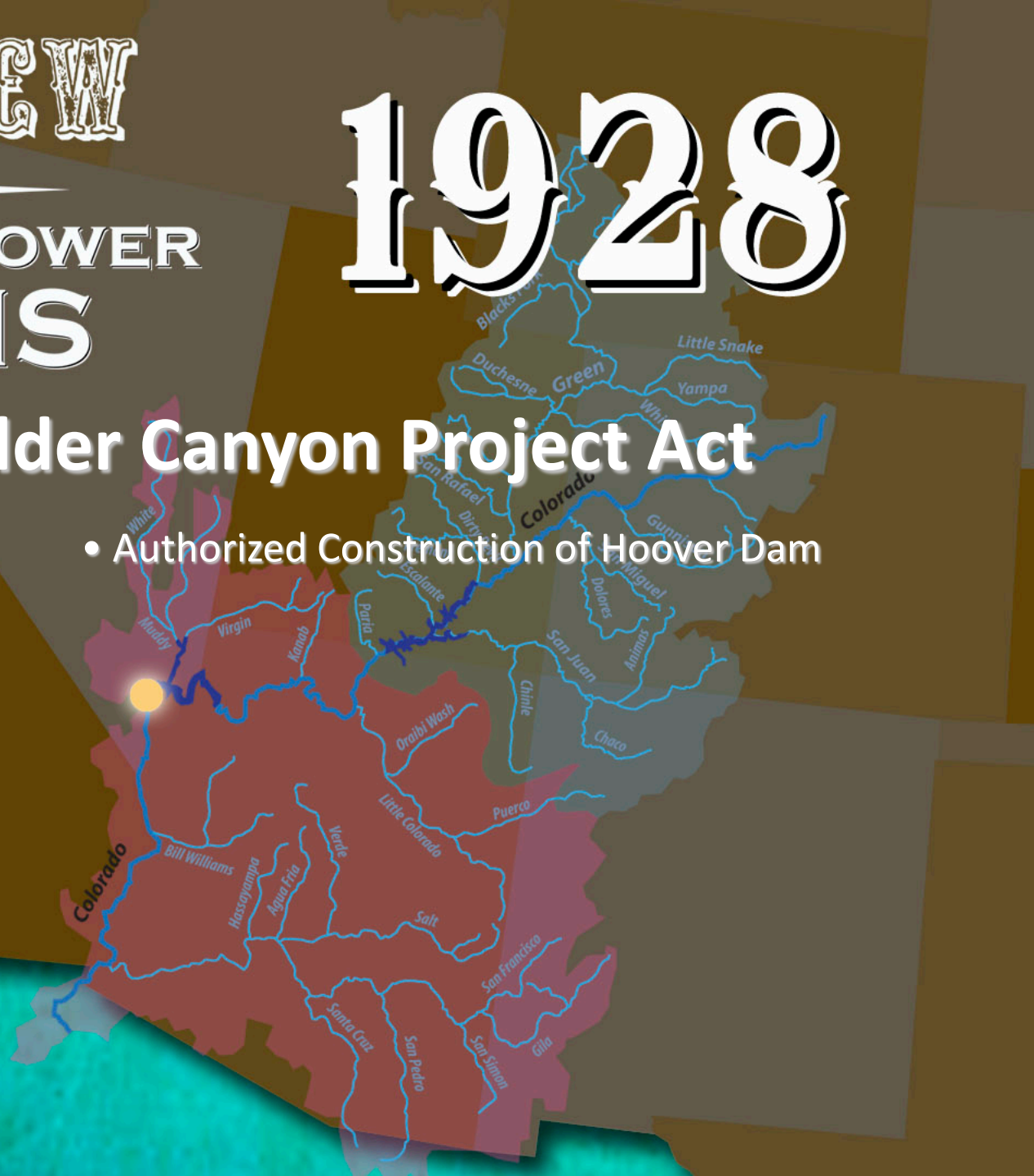
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UPPER AND LOWER BASINS

1928

Boulder Canyon Project Act

- Authorized Construction of Hoover Dam









OVERVIEW

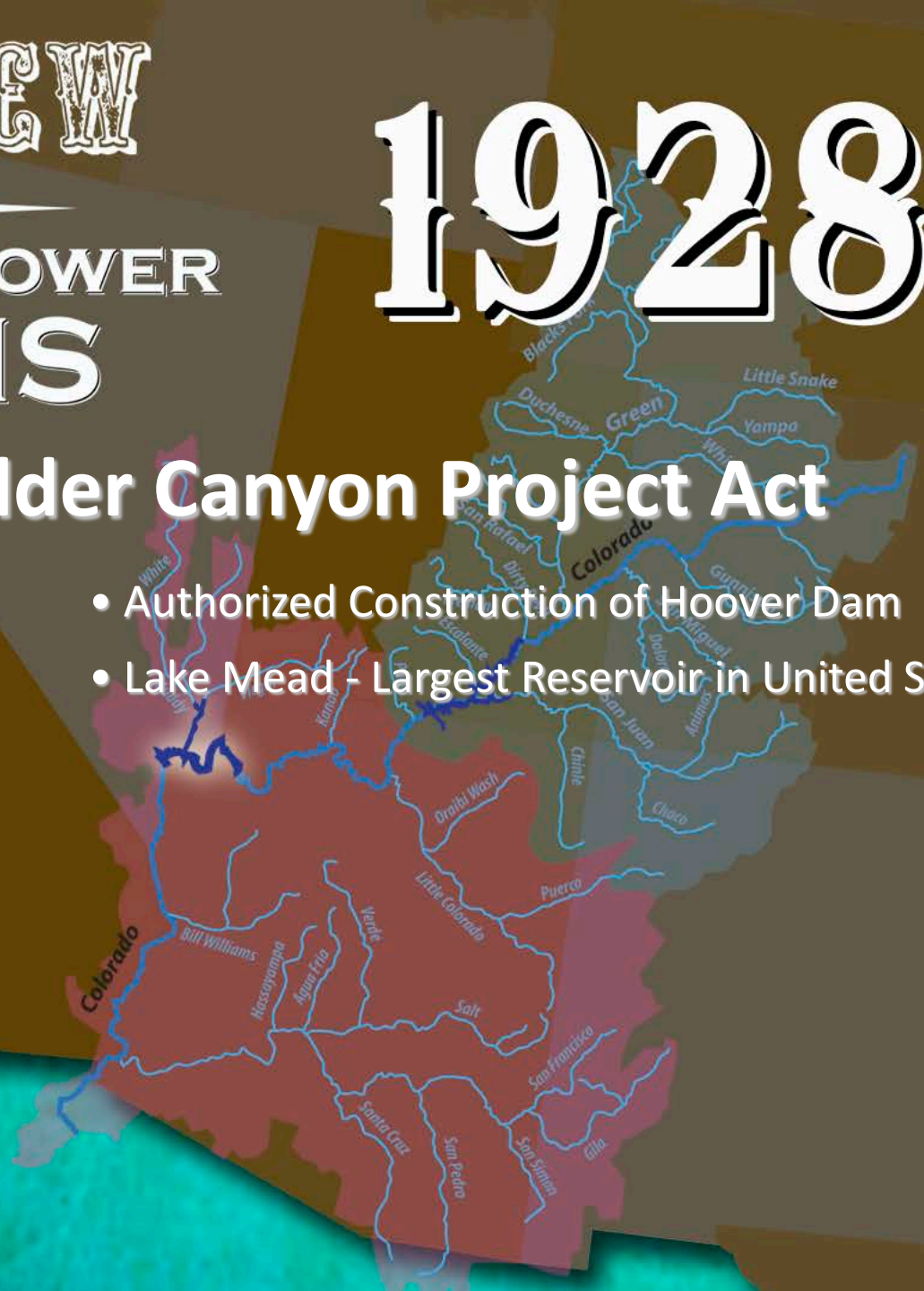
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UPPER AND LOWER BASINS

1928

Boulder Canyon Project Act

- Authorized Construction of Hoover Dam
- Lake Mead - Largest Reservoir in United States





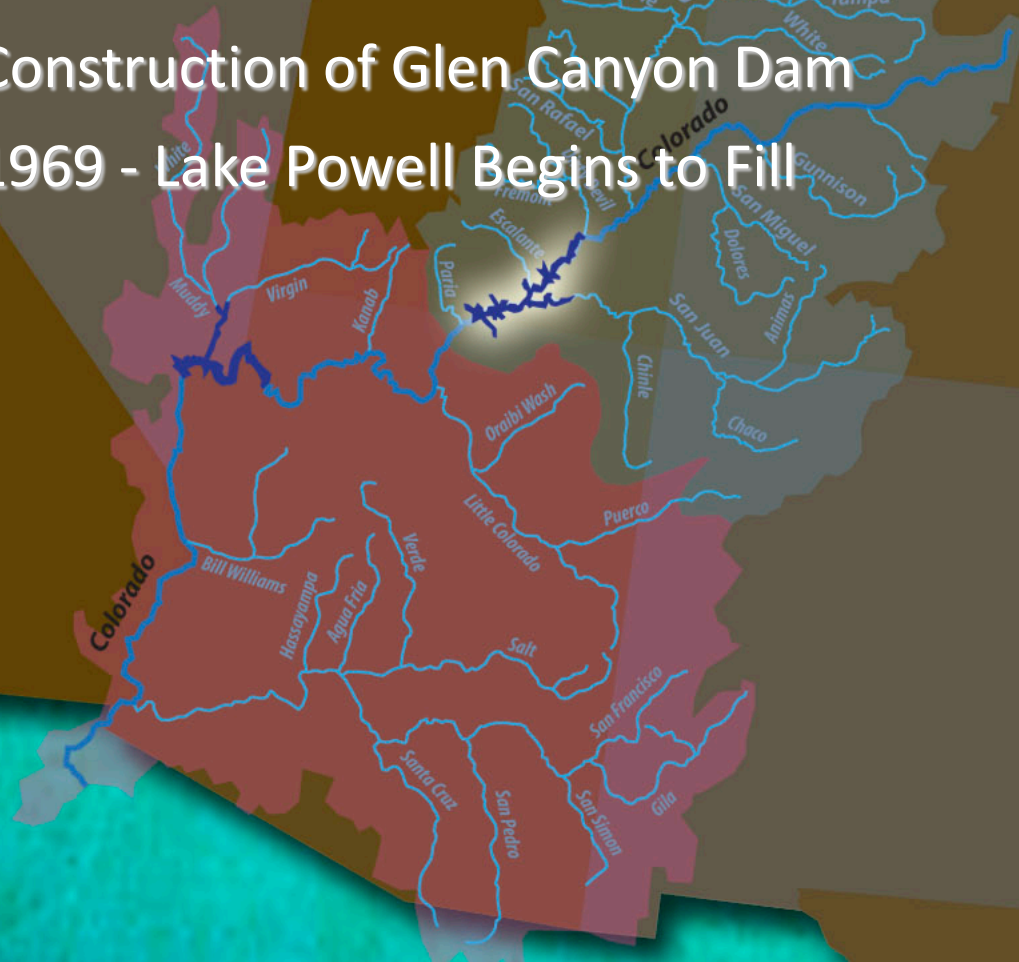


OVERVIEW

— of the — UPPER AND LOWER BASINS

1956

- Construction of Glen Canyon Dam
- 1969 - Lake Powell Begins to Fill







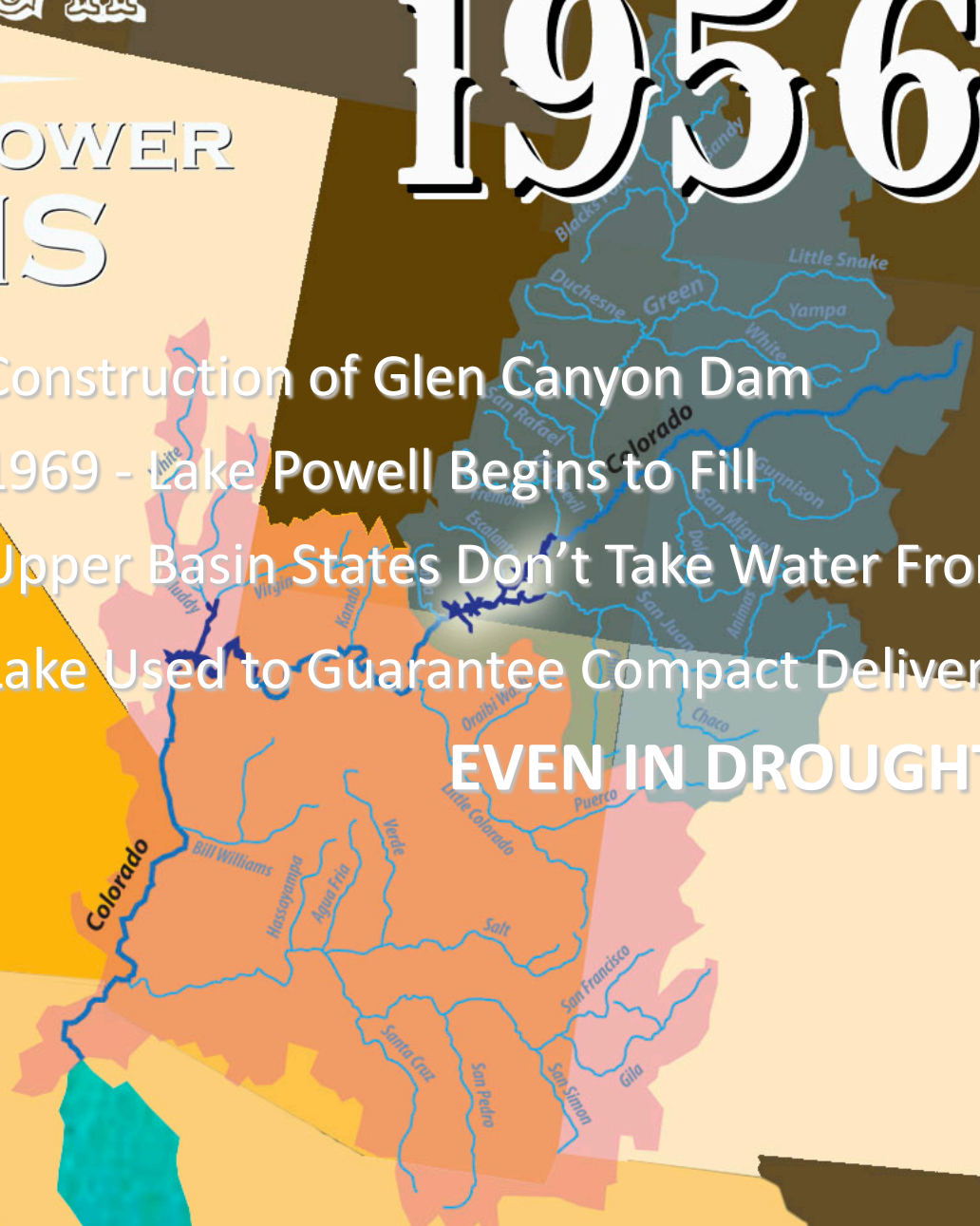
OVERVIEW

— of the — UPPER AND LOWER BASINS

1956

- Construction of Glen Canyon Dam
- 1969 - Lake Powell Begins to Fill
- Upper Basin States Don't Take Water From Lake
- Lake Used to Guarantee Compact Deliveries

EVEN IN DROUGHTS



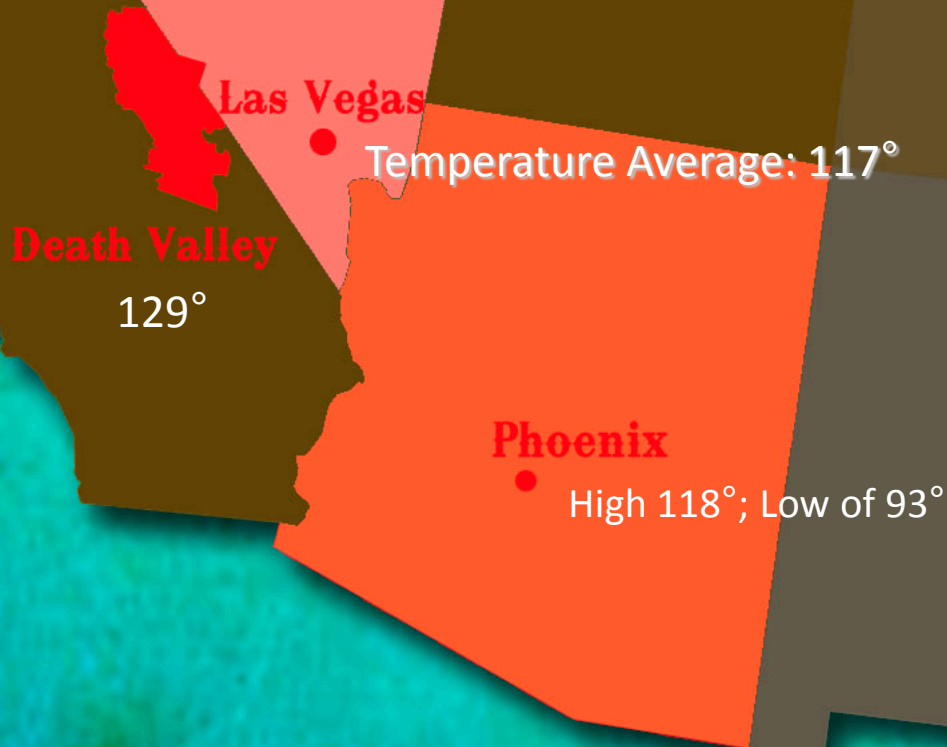
OVERVIEW

— of the —

UPPER AND LOWER BASINS

Today

Western States in Grip of Heat Wave



OVERVIEW

— of the —


UPPER AND LOWER BASINS

Today

Result

More Water Evaporates
Each Year Off of Lake
Mead Than the City of
Los Angeles Uses





OVERVIEW

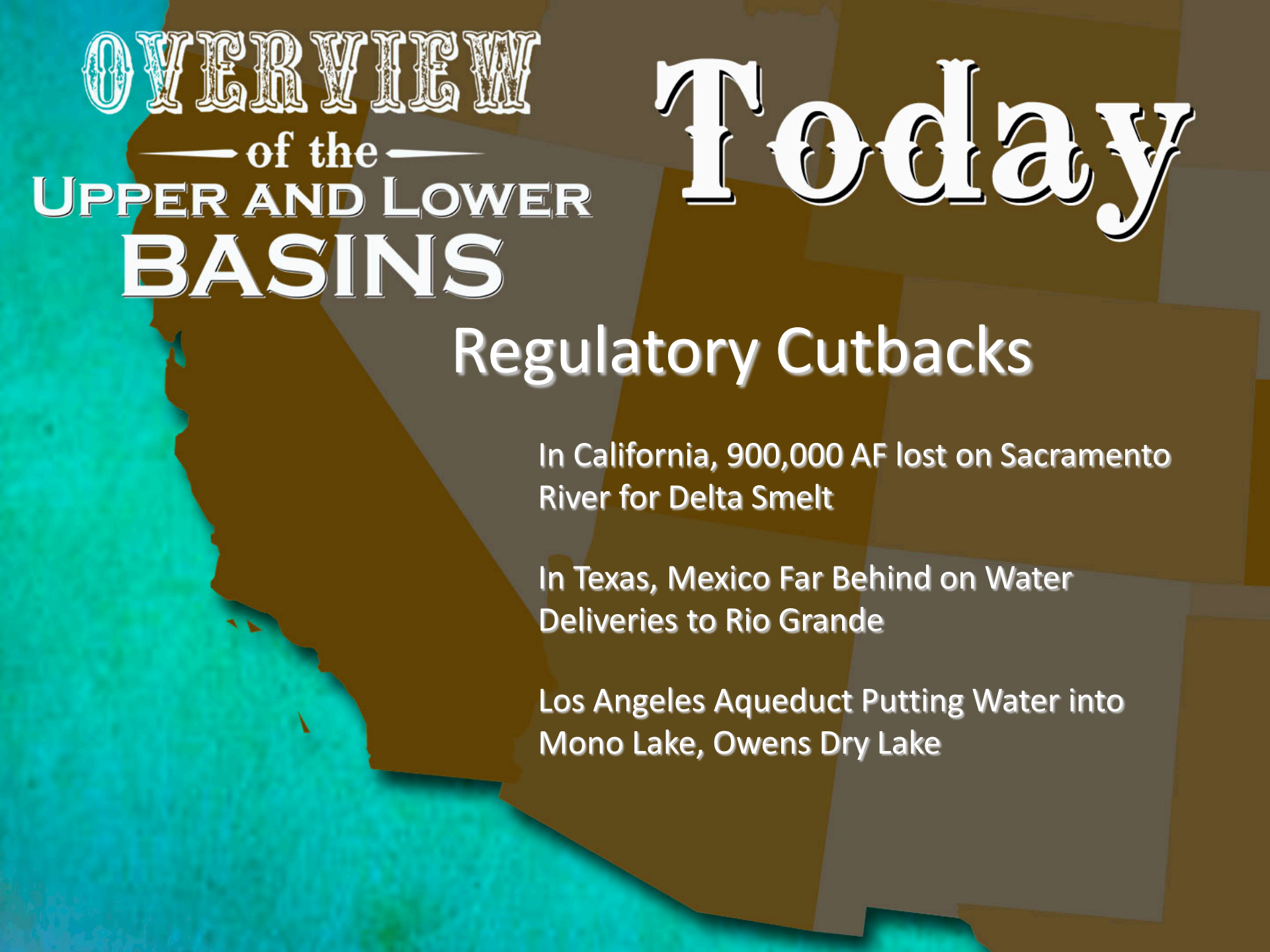
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UPPER AND LOWER BASINS

Today

Western United States in Grip of Severe Drought

- Colorado River
Second Driest 2-Year Period on Record
- Sacramento River
Driest Start to Year Ever
- Rio Grande
29% of Average Flow



OVERVIEW

— of the —

UPPER AND LOWER BASINS

Today

Regulatory Cutbacks

In California, 900,000 AF lost on Sacramento River for Delta Smelt

In Texas, Mexico Far Behind on Water Deliveries to Rio Grande

Los Angeles Aqueduct Putting Water into Mono Lake, Owens Dry Lake

the LOWER Basin

WHERE WE STAND “More Than Enough”

- 1941 Lake Mead First Filled
- Provided Full Drought-Proof Supply of Water
- Provided CA More Water Than State's Allocation
- Allowed Imperial Valley, Coachella Valley, Palo Verde Valley and Yuma Area to Irrigate more than 500,000 Acres
- Allowed Salton Sea in CA to Thrive

the LOWER Basin

WHERE WE STAND “More Than Enough”

- Allowed Arizona and Nevada to Focus on Growth and not Water Supply Issues
- Upper Basin Could Develop Without Risk of Curtailment
- Mexico Routinely Received Significantly More Water Than Treaty Allowed
- Allowed Reservoirs Remained Full

the LOWER Basin

WHERE WE STAND
“More Than Enough”

ENDED 2000

Los Angeles

San Diego

Yuma

Colorado

Lake Havasu City

Bill Williams

Hasceyampa

Agua Fria

Tucson

Santa Cruz

Scottsdale
Phoenix

Prescott

Flagstaff

Winslow

Little Colorado

Salt

San Francisco

San Simon

Gila

Puerco

Lake Powell

Page

Virgin

St. George

Alton

Las Vegas

Henderson

Whitney

Muddy

Kanab

Farmington

Grand Junction

the LOWER Basin

WHERE WE STAND “Just Enough”

- End of Excess Water in the River
- Big Reservoirs Used to Meet Water Needs
- Recreation Impacted with Closing of Many Marinas
- Water Rates in Cities Dramatically Increased
- Communities Adapting:
Cities Increased Conservation Activities

the LOWER Basin

WHERE WE STAND “Just Enough” CALIFORNIA

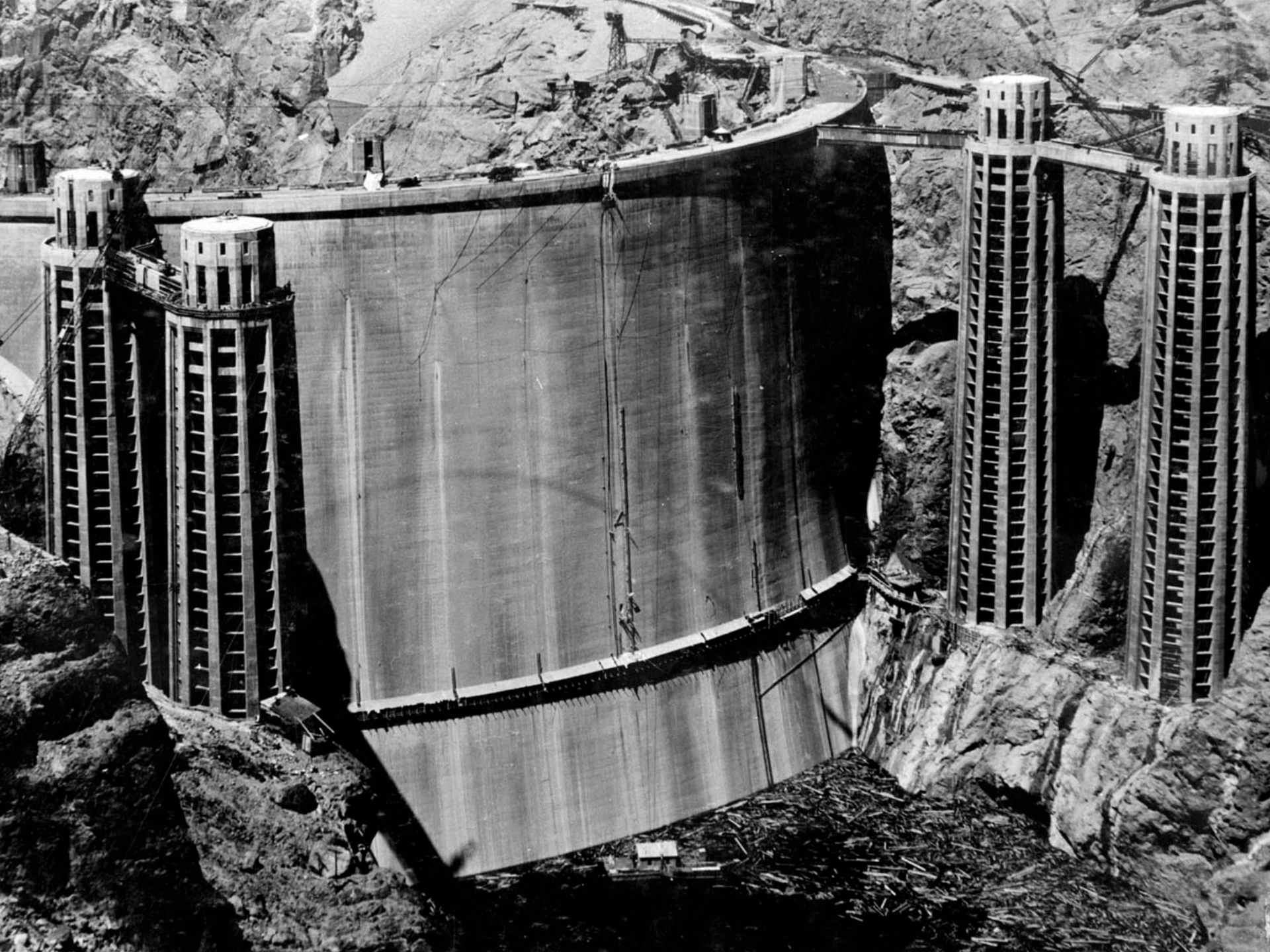
- \$350 Million to Line Canals:
All-American Canal
Coachella Branch
- Investments to Improve Efficiencies
in Imperial Valley
- Incentives for Farmer Conservation:
Imperial Valley
Coachella Valley
Palo Verde Valley
- The Salton Sea
Shrank Despite Receiving 100,000s
of Acre-Feet to Protect It

the LOWER Basin

WHERE WE STAND “Just Enough” NEVADA

- Conservation Measures
Virgin River
Muddy River
- Building New Intake to
Allow Access to Lower
Levels in Lake Mead







the LOWER Basin

WHERE WE STAND “Just Enough” ARIZONA

Arizona partnered with California and Nevada to operate desalting plant in Yuma, construct regulating reservoir near Mexico



the LOWER Basin

WHERE WE STAND “Just Enough” MEXICO

- Limited to Treaty Amount
- No Water Reached Colorado River Delta
- Salinity Control Forum
 - Reduce Colorado River Salinity
 - River Salinity reduced by more than 100 ppm
 - Pumps Saline Brine Into Ground
- US Working with Mexico for More Efficient Farming Techniques

Los Angeles

San Diego

Colorado

Reduce Colorado River Salinity
River Salinity reduced by more
than 100 ppm

Pumps Saline Brine Into Ground

US Working with Mexico for More
Efficient Farming Techniques

the LOWER Basin

WHERE WE STAND “Just Enough” ADDITIONAL IMPACTS

Actions Taken to Improve Basins' Environments

- Upper Basin
Fish Recovery Program
- Lower Basin
Lower Colorado Multiple Species
Conservation Plan
Lost Habitat Recovery



the LOWER Basin

WHERE WE STAND

“Not Enough”

“Not Enough” is Just Around the Corner
We Don't Know When!

2 years?

5 years?

20 years or more?



the LOWER Basin

WHERE WE STAND
“Not Enough”

We Know it's Coming!

Reservoirs Continue to Drop

Demand Outstripping Existing Supplies

Los Angeles

San Diego

Yuma

Colorado

Bill Williams

Mojave

Apache

Scottsdale

Phoenix

Tucson

Santa Cruz

San Pedro

San Francisco

San Simon

Gila

Las Vegas

Henderson

St. George

Virgin

Page

Lake Powell

Flagstaff

Moab

Farmington

Grand Junction

Colorado

San Juan

Dolores

San Juan

Montezuma

Chaco

the LOWER Basin

WHERE WE STAND “Not Enough”

2009

The Basin States and BUREC. of Reclamation

The Basin Study

- Colorado River Basin Water Supply and Demand
- Specifically — The Impact of “Not Enough”
- Consider Options to Deal with “Not Enough”
- Completed December 2012

the LOWER Basin

WHERE WE STAND “Not Enough”

The Basin Study Findings I

- Population Growth Increasing
- Drought Conditions Mean Crops Need More Water to Produce Same Yield
- Climate Change Will Likely Reduce River Flow, by Average of 9%

the LOWER Basin

WHERE WE STAND

“Not Enough”

The Basin Study Findings II *By the Year 2060*

- Average Supply and Demand Gap Reaches 3.2 MAF
- Cities Face Massive Curtailments
- Possible Millions of Acres of Farmland Lost
- Power Plants Unable to Generate Energy
- Recreation Opportunities Severely Restricted
- Salton Sea Shrinking Shoreline Becoming A Dust Bowl

the LOWER Basin

WHERE WE STAND

“Not Enough”

The Basin Study Recommendations I Increase Supply

- Desalination of Groundwater and Ocean Water
- Increase Water Recycling
- Watershed Management
 - Weather Modification
 - Tamarisk Removal





the LOWER Basin

WHERE WE STAND

“Not Enough”

The Basin Study Recommendations I Increase Supply

- Desalination of Groundwater and Ocean Water
- Increase Water Recycling
- Watershed Management
 - Weather Modification
 - Tamarisk Removal
 - Dust Control
- Importation
 - Mississippi River



the LOWER Basin

WHERE WE STAND

“Not Enough”

The Basin Study Recommendations II *Reduce Demand*

M & I, Ag Conservation

Energy Efficiency

Los Angeles

San Diego

Yuma

Colorado

Las Vegas

St. George

Virgin

Lake Mead

Preston

Bill Williams

Marysvale

Apache Lake

Flagstaff

Scottsdale

Phoenix

Tucson

Santa Cruz

San Pedro

San Francisco

San Simon

Gila

Puebla

Little Colorado

Verde

Orabi Wash

Page

Moab

Colorado

Grand Junction

Farmington

Chico

San Juan

San Rafael

San Carlos

San Manuel

San Antonio

San Marcos

San Dimas

San Gabriel

San Bernardino

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the LOWER Basin

WHERE WE STAND

“Not Enough”

The Basin Study Recommendations III
Modify System Operations

Evaporation Control

Water Banking and Transfers



CONGRESS AND THE COLORADO River



Key Issues

Before Congress
And the Administration



CyberSecurity

- Developing Standard Guidelines
- Best Management Practices
- Action to Reduce Vulnerabilities in Process Control Systems



Water Quality

- Chlorine Gas
Treatment Disinfectant
Many Local Jurisdictions Utilize
Continued Use and/or Storage Issues

- Interstate Issues

Initiatives and Funding to Protect and
Improve Water Quality Including:

Chromium

Nitrates

Perchlorate

Salinity

Uranium

Pharmaceuticals

MTBE and Other Gasoline Additives

Personal Care Products



Environmental Protection

- National Environmental Policy Act (NEPA)
Actions Needed to Improve Clarity and Workability
Eliminate Duplicative Federal and State Processes



Invasive Species

- Funding for Control and Eradication
Quagga Mussels



Invasive Species

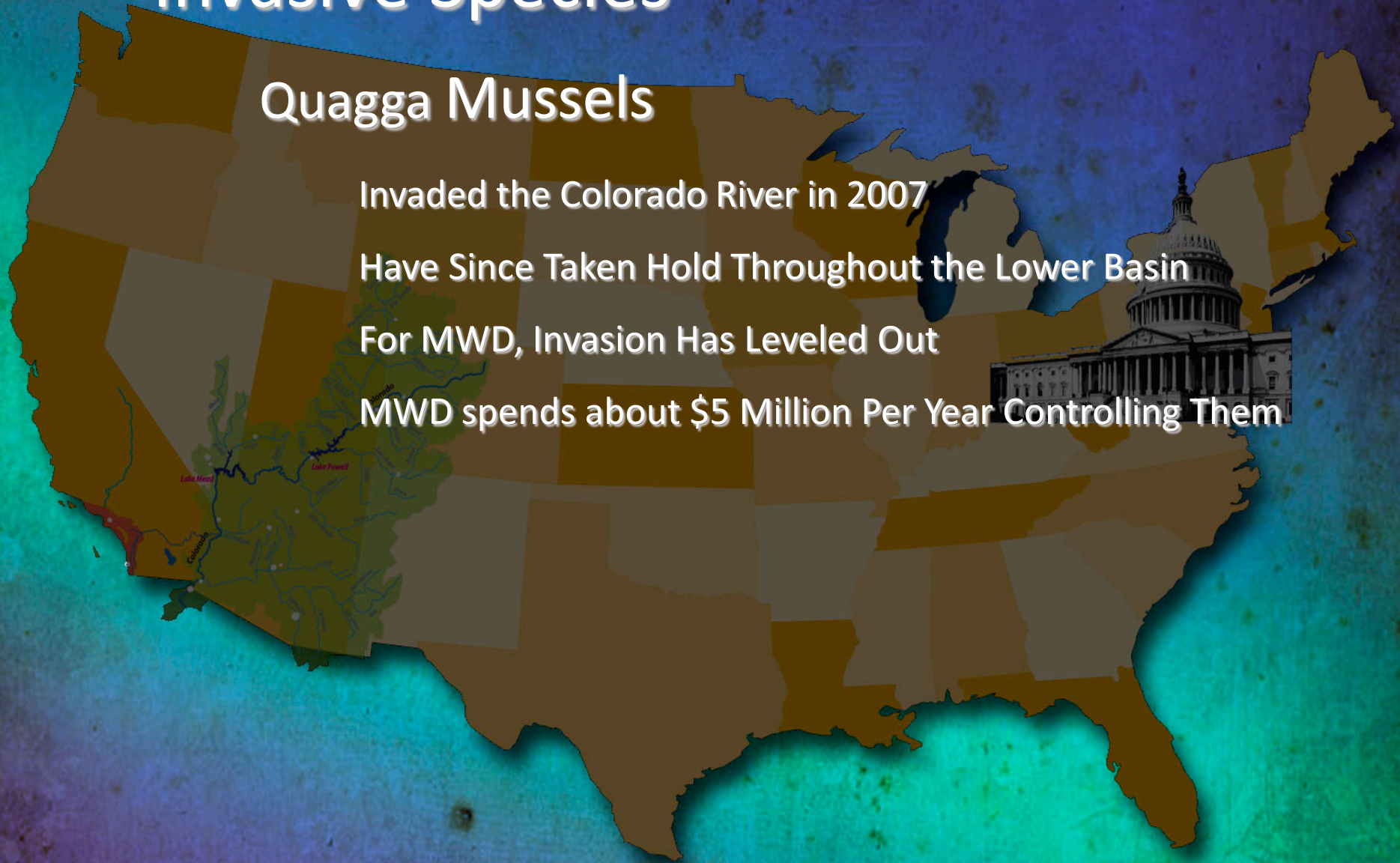
Quagga Mussels

Invaded the Colorado River in 2007

Have Since Taken Hold Throughout the Lower Basin

For MWD, Invasion Has Levelled Out

MWD spends about \$5 Million Per Year Controlling Them



Invasive Species

- Funding for Control and Eradication

Quagga Mussels

Tamarisk

Non-Native Fish

- Action Consistency

Work Within Current Interstate Water Transfers

Not Interfere with Water Transfers



Invasive Species

Pending Legislation In Congress

- **H.R. 1823**
The Protecting Lakes Against Quaggas Act of 2013
(Heck, R-NV)
- **S.1451**
The Lake Tahoe Restoration Act of 2013
(Feinstein, D-CA)
- **H.R. 996 and S.1153**
The Invasive Fish and Wildlife Prevention Act
(Slaughter, D-NY) • (Gillibrand, D-NY)



Energy Sustainability

- Hoover Dam
Hydropower Generation
Interstate Coordination
Needed to Implement Federal Law
Lower Basin Energy Interests in the Long-Term
- Energy Efficiency Grants
Legislation Needed Authorizing Grants
Programs to Reduce Greenhouse Gases
Develop Renewable Resources
- Renewable Energy Credits
Legislation and Administrative Actions Needed
For Both Small and Large Hydroelectric
Facilities , Irrespective of Capacity



Infrastructure and Public Finance

- Tax-Credit Financing
- Tax-Exempt Municipal Bonding
- Other Funding Mechanisms to Reduce the Cost of Water Projects



Appropriations

- Farm Bill
USDA Programs
On-Farm Water Conservation
Watershed Protection Projects
- Colorado River Basin Salinity Control Program
- Colorado River Drought Resiliency Projects
- Water Quality Initiatives
(Chromium, Nitrate, Perchlorate, Salinity, Uranium,
Pharmaceuticals, Personal Care Products, Etc.)



Appropriations

- Invasive Species Control and Eradication
- Solar and Other Renewable and Efficiency Projects
- Lower Colorado River Multi-Species Conservation Plan
- Bureau of Reclamation Title XVI Program



Treaty with Mexico



◆ FROM THE HALLS OF ◆
CONGRESS

→ To the Canyons of ←

THE COLORADO





U.S. Senate

ARIZONA

Senator John McCain (R)

Ranking Republican on the Senate Foreign Affairs
Subcommittee on Western Hemisphere

Senator John Flake (R)

Senator Flake serves on the Senate Energy and
Natural Resources Committee





U.S. House of Representatives

By District

ARIZONA

- 1st — Rep. Ann Kirkpatrick (D)
- 2nd — Rep. Ron Barber (D)
- 3rd — Rep. Raúl Grijalva (D)
- 4th — Rep. Paul Gosar (R)
- 5th — Rep. Matt Salmon (R)
- 6th — Rep. David Schweikert (R)
- 7th — Rep. Ed Pastor (D)
- 8th — Rep. Trent Franks (R)
- 9th — Rep. Kyrsten Sinema (D)





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5th — Rep. Matt Salmon (R)

Chairman — Foreign Affairs Sub-Committee on Western Hemisphere

6th — Rep. David Schweikert (R)

7th — Rep. Ed Pastor (D)

Ranking Democrat on Appropriations Subcommittee on Energy and Water Development

8th — Rep. Trent Franks (R)

9th — Rep. Kyrsten Sinema (D)





CALIFORNIA

U.S. Senate

Senator Barbara Boxer (D)

Chairs Senate Committee on Environment and
Public Works

Senator Dianne Feinstein (D)

Chairs the Senate Appropriations Subcommittee
on Energy and Water Development





U.S. House of Representatives By District

CALIFORNIA

1st — Rep. Doug LaMalfa [R]	23rd — Rep. Kevin McCarthy [R]	45th — Rep. John Campbell III [R]
2nd — Rep. Jared Huffman [D]	24th — Rep. Lois Capps [D]	46th — Rep. Loretta Sanchez [D]
3rd — Rep. John Garamendi [D]	25th — Rep. Howard “Buck” McKeon [R]	47th — Rep. Alan Lowenthal [D]
4th — Rep. Tom McClintock [R]	26th — Rep. Julia Brownley [D]	48th — Rep. Dana Rohrabacher [R]
5th — Rep. Mike Thompson [D]	27th — Rep. Judy Chu [D]	49th — Rep. Darrell Issa [R]
6th — Rep. Doris Matsui [D]	28th — Rep. Adam Schiff [D]	50th — Rep. Duncan Hunter [R]
7th — Rep. Ami Bera [D]	29th — Rep. Tony Cárdenas [D]	51st — Rep. Juan Vargas [D]
8th — Rep. Paul Cook [R]	30th — Rep. Brad Sherman [D]	52nd — Rep. Scott Peters [D]
9th — Rep. Jerry McNerney [D]	31st — Rep. Gary Miller [R]	53rd — Rep. Susan Davis [D]
10th — Rep. Jeff Denham [R]	32nd — Rep. Grace Napolitano [D]	
11th — Rep. George Miller [D]	33rd — Rep. Henry Waxman [D]	
12th — Rep. Nancy Pelosi [D]	34th — Rep. Xavier Becerra [D]	
13th — Rep. Barbara Lee [D]	35th — Rep. Gloria Negrete McLeod [D]	
14th — Rep. Jackie Speier [D]	36th — Rep. Raul Ruiz [D]	
15th — Rep. Eric Swalwell [D]	37th — Rep. Karen Bass [D]	
16th — Rep. Jim Costa [D]	38th — Rep. Linda Sánchez [D]	
17th — Rep. Michael “Mike” Honda [D]	39th — Rep. Edward “Ed” Royce [R]	
18th — Rep. Anna Eshoo [D]	40th — Rep. Lucille Roybal-Allard [D]	
19th — Rep. Zoe Lofgren [D]	41st — Rep. Mark Takano [D]	
20th — Rep. Sam Farr [D]	42nd — Rep. Ken Calvert [R]	
21st — Rep. David Valadao [R]	43rd — Rep. Maxine Waters [D]	
22nd — Rep. Devin Nunes [R]	44th — Rep. Janice Hahn [D]	



CALIFORNIA

U.S. House of Representatives By District

4th — Rep. Tom McClintock (R)

32nd — Rep. Grace Napolitano (D)

33rd — Rep. Henry Waxman (D)

39th — Rep. Edward "Ed" Royce (R)

Chairman — House Foreign Affairs Committee

42nd — Rep. Ken Calvert (R)

49th — Rep. Darrell Issa (R)





U.S. Senate

NEVADA

Senator Harry Reid (D)

MAJORITY LEADER

Played a key role in legislation of interest to the Colorado River Lower Basin, especially his long tenure as a leader on the Senate Appropriations Committee

Senator Dean Heller (R)

Member of the Senate Energy and Natural Resources Committee



U.S. House of Representatives

By District

NEVADA

- 1st — Rep. Dina Titus (D)
- 2nd — Rep. Mark Amodei (R)
- 3rd — Rep. Joseph Heck (R)
- 4th — Rep. Steven Horsford (D)





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By District

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CONGRESS AND THE COLORADO River

A LOWER BASIN PERSPECTIVE



- Funding for Lower Colorado River Multi-Species Conservation Plan
- Coordination Between Federal and State Agencies to Implement Quantification Settlement Agreement (QSA)
- Funding for Colorado River Drought Resilience Projects
- Funding for Colorado River Basin Salinity Control Program
- Water conservation programs enabled by United States water treaty with Mexico



CONGRESS AND THE COLORADO River

A LOWER BASIN PERSPECTIVE



Conclusion

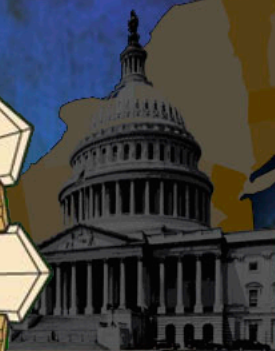
- The Colorado Basin Is The Lifeblood Of The American Southwest
- Adapting To Changing Conditions

From More Than Enough, To Just Enough, And Soon To Be Not Enough In A Short Timeframe

- The Basin Study Is A Call To Action



It Is Time To Work Together As A River Basin With Other Arid Western States To Meet Our Future Challenges



Lake Mead

Colorado