

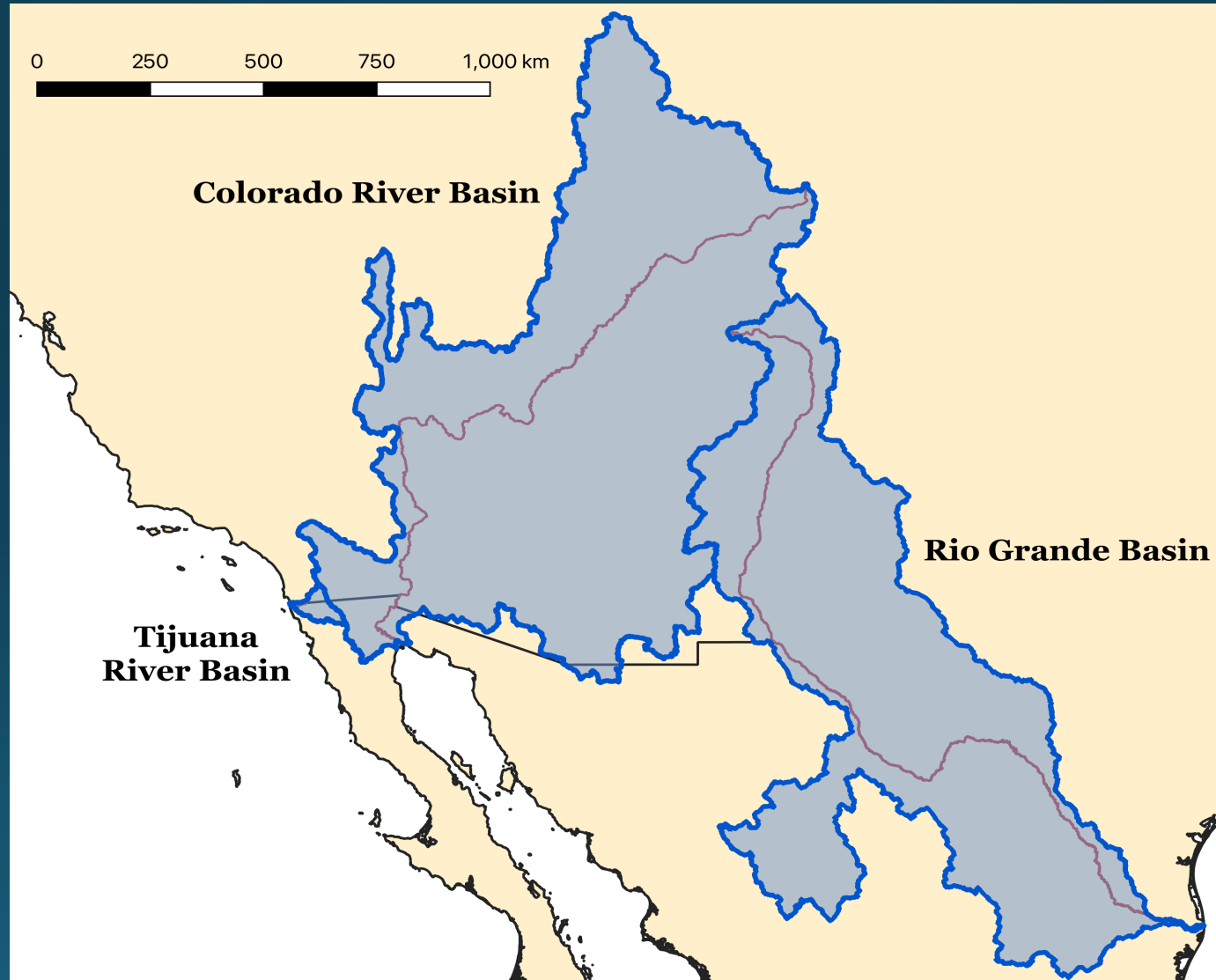
U.S.-Mexico Water Management: The Rio Grande/Bravo

Vianey Rueda

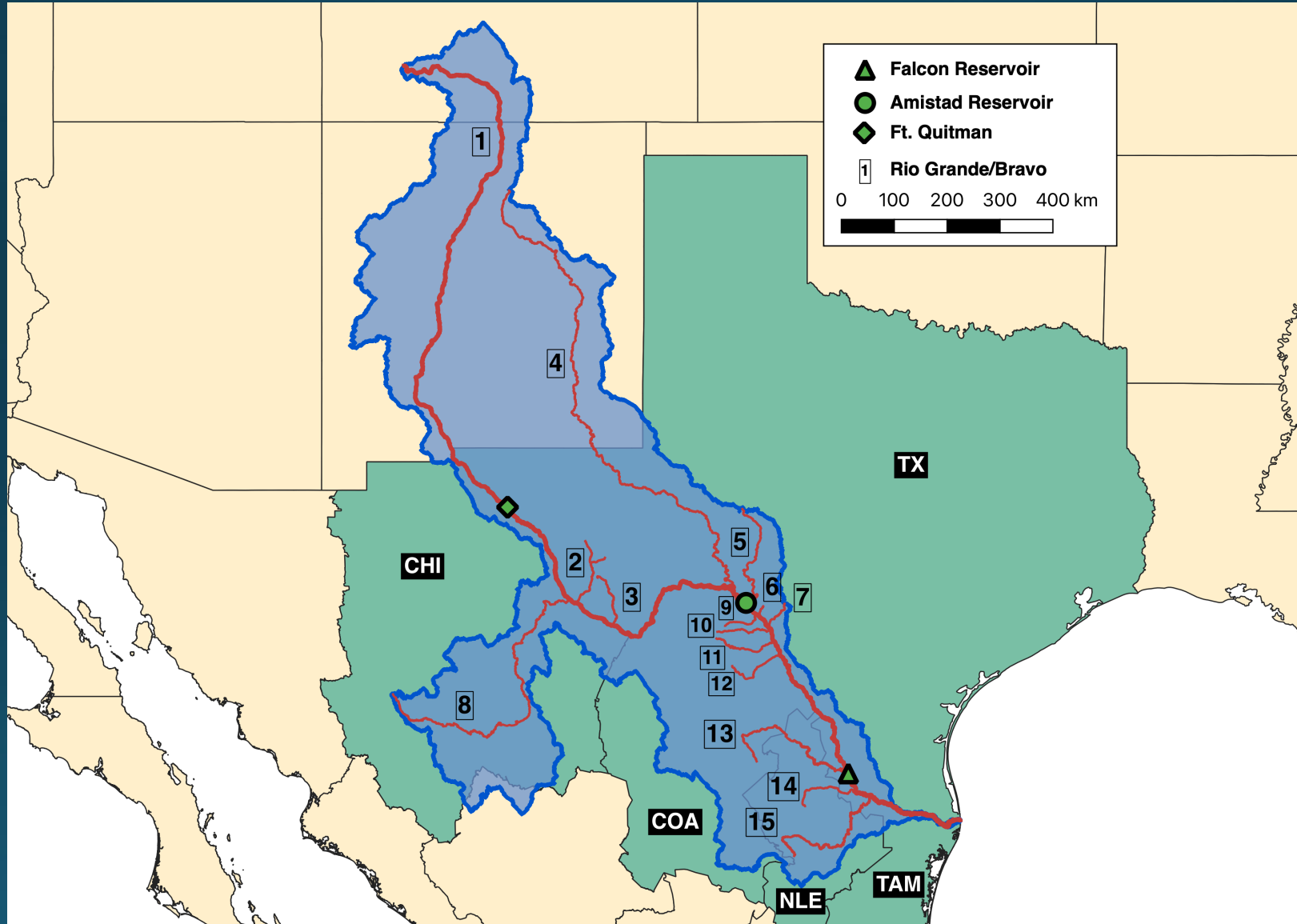
Guest Presentation

June 11, 2024

1944 Water Treaty



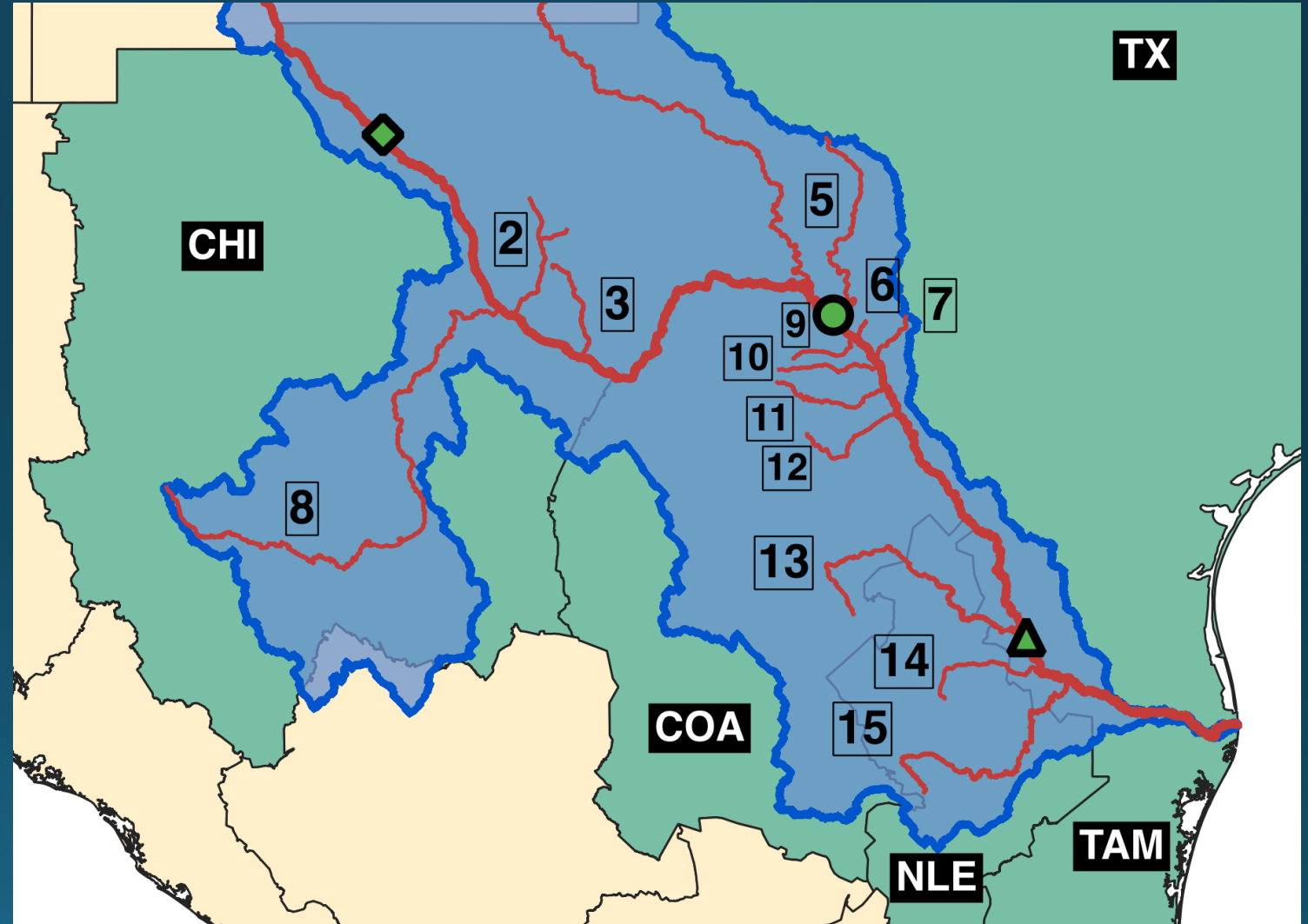
Rio Grande/Bravo Basin



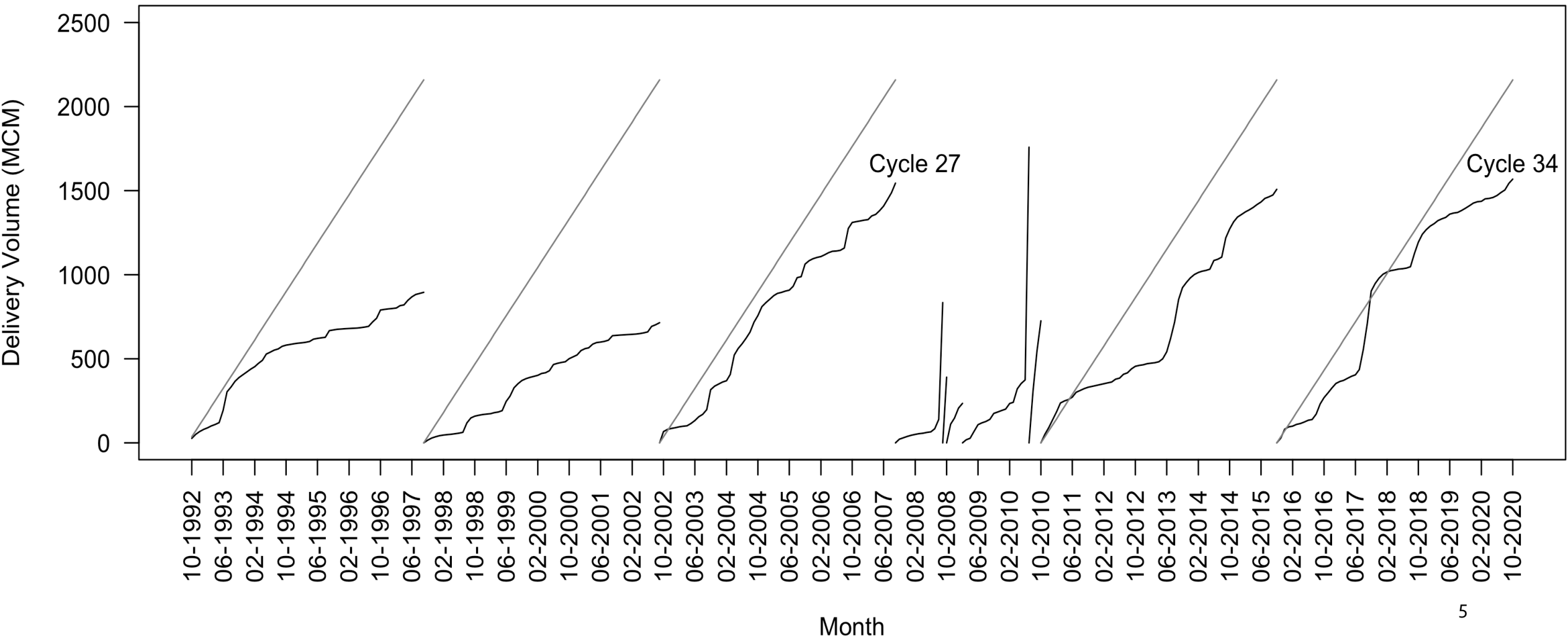
Six Mexican Tributaries

431.7 MCM annual average

2,158.6 MCM every 5 years



The one-third delivery from the six tributaries has been insufficient to comply with the Treaty.



Compliance Matters

1992-2007: Texas, US

- Retaliation
- Presidential intervention

2020: Chihuahua, MX

- Protests
- Armed confrontation

Ongoing Water crises

- <25% of Cycle 35 target (2020-2025)
- Record temperature highs
- Day Zero



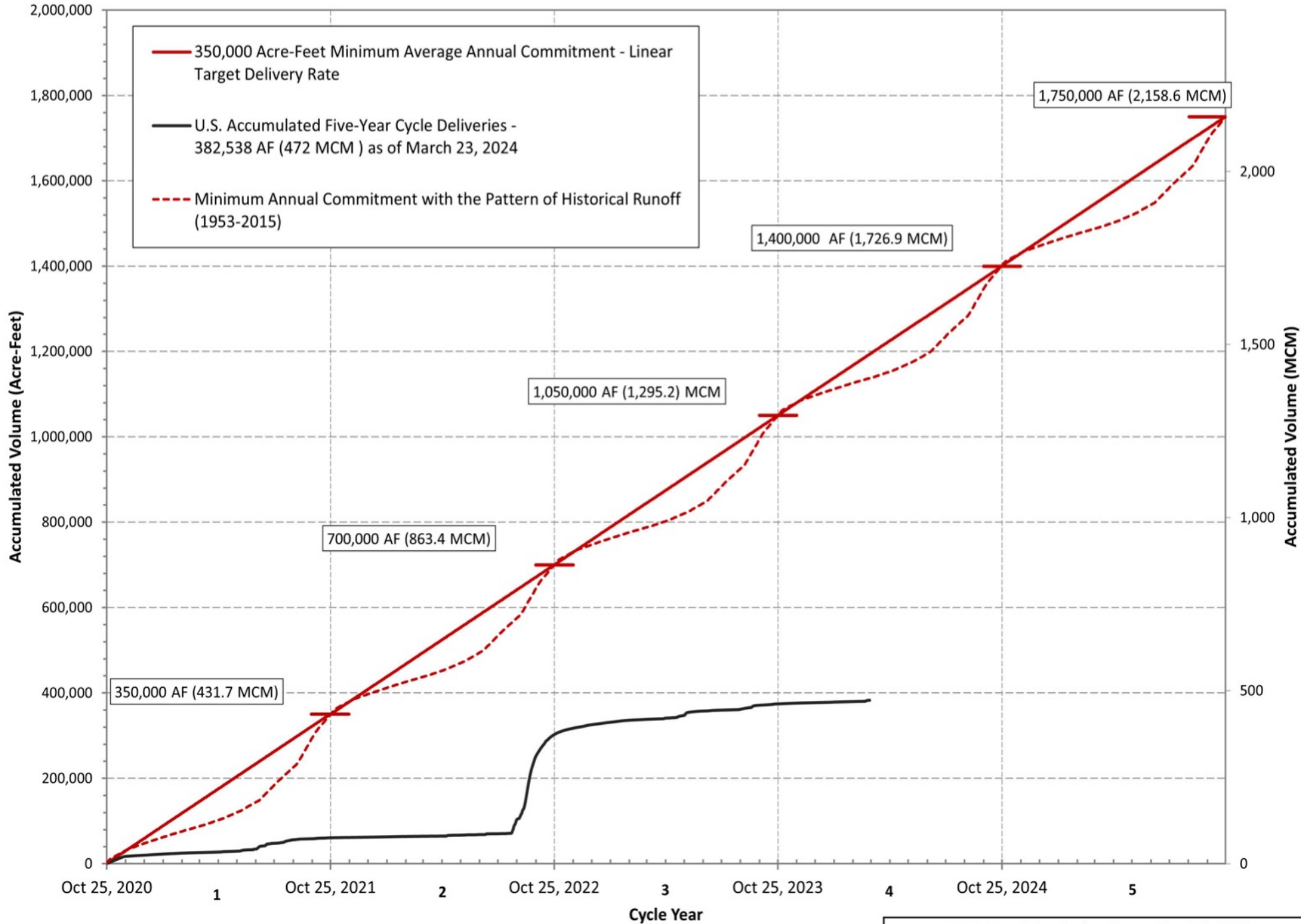
Taps have run dry in a major Mexico city for months. A similar water crisis looms in the US, experts say.

Drought is sapping the water from huge swaths of North America and making it increasingly hard for humans to count on running water.

[USA Today 2022](#)



Current Cycle



Current Tension

Parched Texas growing season looms as US, Mexico spar over water treaty

By Leah Douglas, Cassandra Garrison and Marcelo Teixeira

April 18, 2024 6:28 AM EDT · Updated 2 months ago



Texas delegation urges Congress to withhold aid to Mexico over water treaty dispute

A bipartisan group of Texas lawmakers are demanding appropriators withhold funds for the country until Mexico lives up to its end of a 1944 water treaty that requires it to send 1.75 million acre-feet to the U.S. every five years.

BY **MATTHEW CHOI** MAY 13, 2024 9 AM CENTRAL

SHARE REPUBLISH

A water war is brewing between the U.S. and Mexico. Here's why.

In south Texas, a water shortage killed the sugar industry and could slow growth in booming border towns.



By [Scott Dance](#)

The Rio Grande/Bravo

1906 Convention

1939 Rio Grande Compact

1944 Water Treaty

Climate Change

Growing Demand



A Forgotten River



A Forgotten River



**The Rio Grande isn't just a border –
it's a river in crisis**

Published: October 24, 2023 8:23am EDT









Water Demand



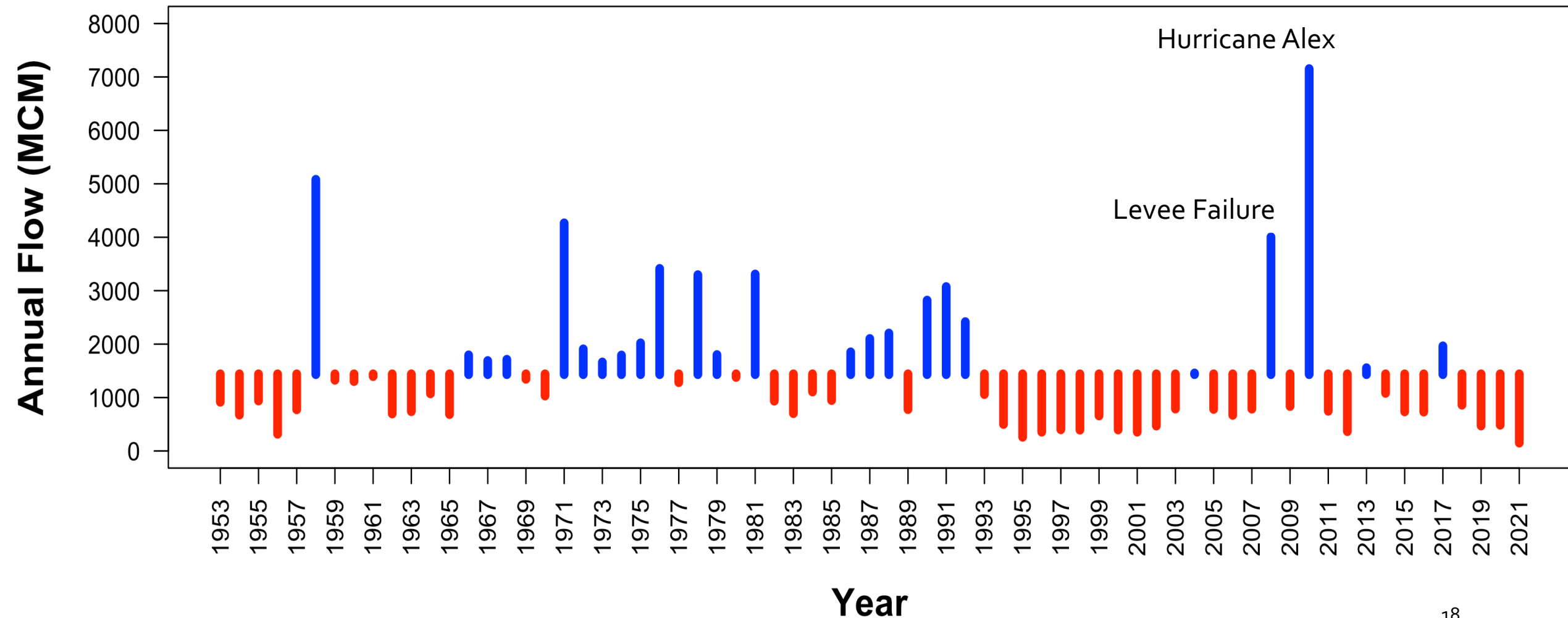
City/Municipio, State (arranged by sister-city pairs)	1990 Population (Census)	2000 Population (Census)	1990-2000 %-age Increase	2010 Population (Census)	2000-2010 %-age Increase
El Paso, Texas MSA*	591,610	679,622	14.9	800,647	17.8
Ciudad Juárez, Chihuahua	798,499	1,217,818	53	1,332,131	9.4
Presidio, Texas	3,072	4,167	35.6	4,426	6.2
Ojinaga, Chihuahua	23,910	24,313	2.0	26,304	8.2
Del Rio, Texas	30,705	33,867	10.3	35,591	5.1
Ciudad Acuña, Coahuila	56,3360	110,388	96.0	136,755	23.9
Eagle Pass, Texas	20,651	22,413	8.5	26,248	17.1
Piedras Negras, Coahuila	98,185	127,898	30.0	152,806	19.5
Laredo, Texas MSA*	133,239	193,117	44.9	250,304	29.6
Nuevo Laredo, Tamaulipas	219,468	310,277	41.0	384,033	23.8
McAllen-Edinburg-Mission, Texas MSA*	383,545	569,463	48.5	774,769	36.1
Reynosa, Tamaulipas	282,667	419,776	49.0	608,891	45.8
Brownsville-Harlingen-San Benito, Texas MSA*	260,120	335,227	28.9	406,220	21.2
Matamoros, Tamaulipas	303,293	416,428	37.0	489,193	17.5
All seven Texas population centers	1,422,942	1,837,876	29.2	2,298,205	25.0
All seven Mexican population centers	1,758,448	2,602,585	48.0	3,130,113	20.3
Total of seven sister-city pairs	3,181,390	4,440,461	77.2	5,428,318	22.2
For Comparison - State of Texas	16,986,510	20,851,820	22.8	25,145,561	20.6

Water Demand

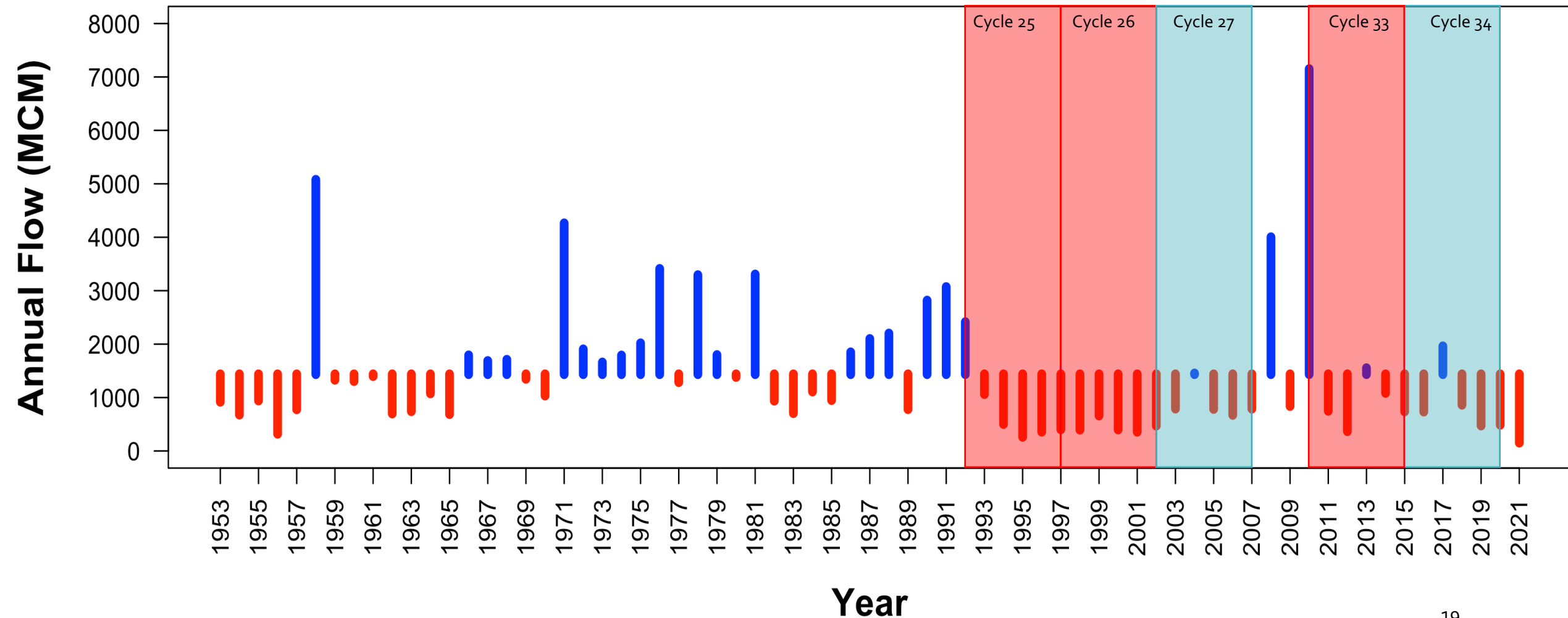


City/Municipio, State (arranged by sister-city pairs)	1990 Population (Census)	2000 Population (Census)	1990-2000 %-age Increase	2010 Population (Census)	2000-2010 %-age Increase
El Paso, Texas MSA*	591,610	679,622	14.9	800,647	17.8
Ciudad Juárez, Chihuahua	798,499	1,217,818	53	1,332,131	9.4
Presidio, Texas	3,072	4,167	35.6	4,426	6.2
Ojinaga, Chihuahua	23,910	24,313	2.0	26,304	8.2
Del Rio, Texas	30,705	33,867	10.3	35,591	5.1
Ciudad Acuña, Coahuila	56,3360	110,388	96.0	136,755	23.9
Eagle Pass, Texas	20,651	22,413	8.5	26,248	17.1
Piedras Negras, Coahuila	98,185	127,898	30.0	152,806	19.5
Laredo, Texas MSA*	133,239	193,117	44.9	250,304	29.6
Nuevo Laredo, Tamaulipas	219,468	310,277	41.0	384,033	23.8
McAllen-Edinburg-Mission, Texas MSA*	383,545	569,463	48.5	774,769	36.1
Reynosa, Tamaulipas	282,667	419,776	49.0	608,891	45.8
Brownsville-Harlingen-San Benito, Texas MSA*	260,120	335,227	28.9	406,220	21.2
Matamoros, Tamaulipas	303,293	416,428	37.0	489,193	17.5
All seven Texas population centers	1,422,942	1,837,876	29.2	2,298,205	25.0
All seven Mexican population centers	1,758,448	2,602,585	48.0	3,130,113	20.3
Total of seven sister-city pairs	3,181,390	4,440,461	77.2	5,428,318	22.2
For Comparison - State of Texas	16,986,510	20,851,820	22.8	25,145,561	20.6

There is an alignment between the hydrological conditions of tributaries and treaty compliance.



There is an alignment between the hydrological conditions of tributaries and treaty compliance.



Annual Flow (MCM)

Conchos

Arroyo Las Vacas

San Diego

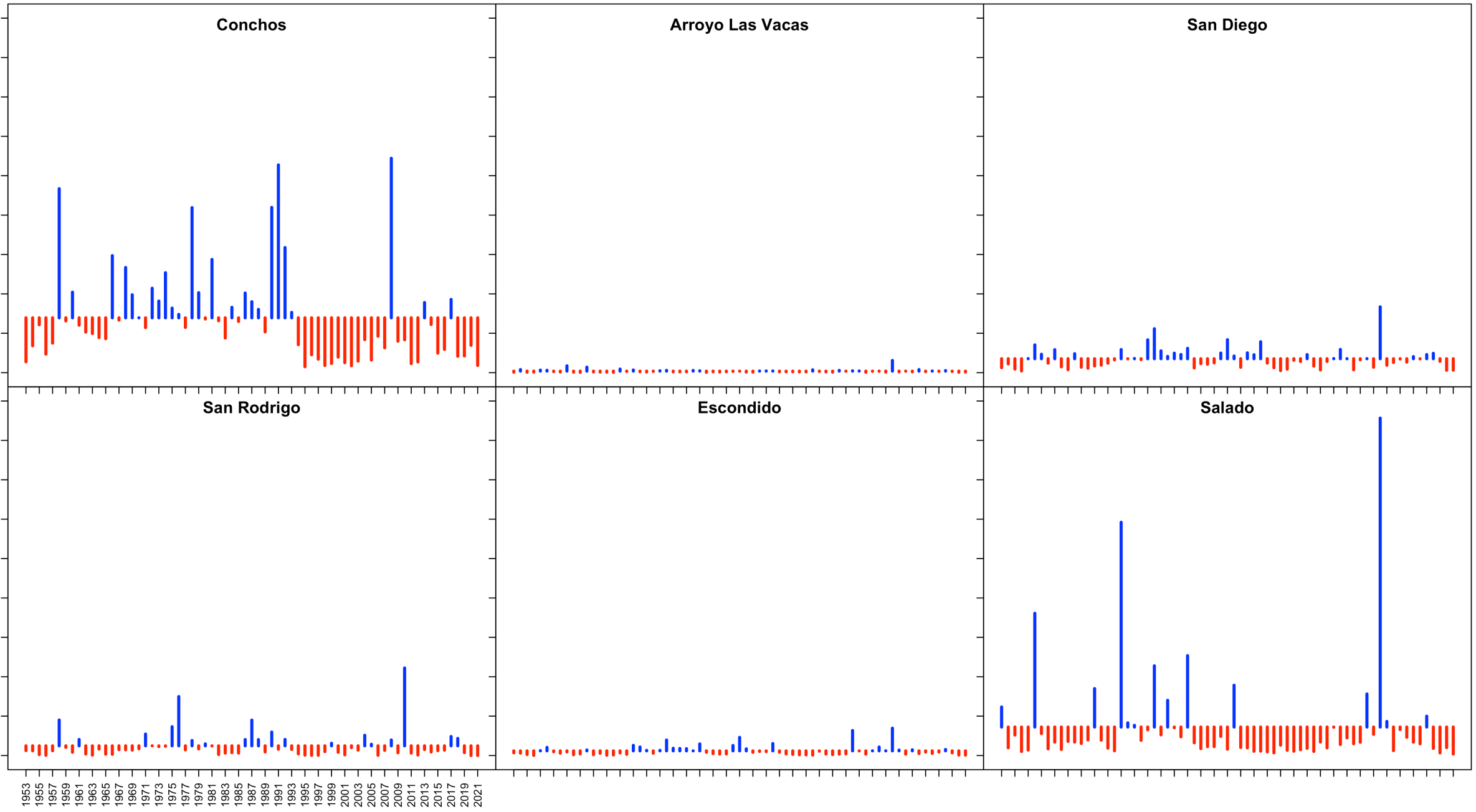
San Rodrigo

Escondido

Salado

1953 1955 1957 1959 1961 1963 1965 1967 1969 1971 1973 1975 1977 1979 1981 1983 1985 1987 1989 1991 1993 1995 1997 1999 2001 2003 2005 2007 2009 2011 2013 2015 2017 2019 2021

Year



Examples of Adaptation

Minute Process

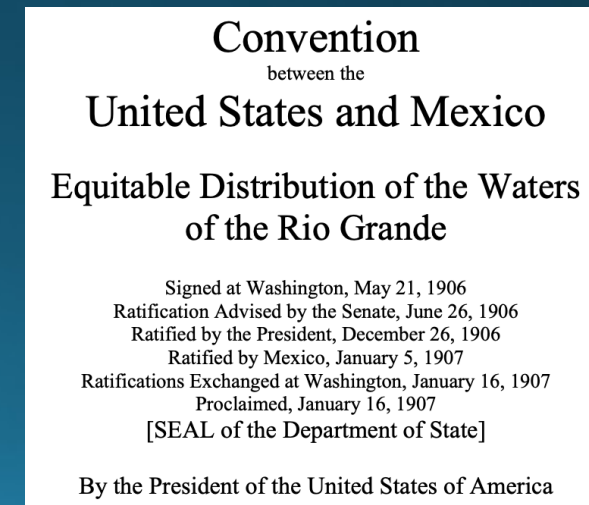
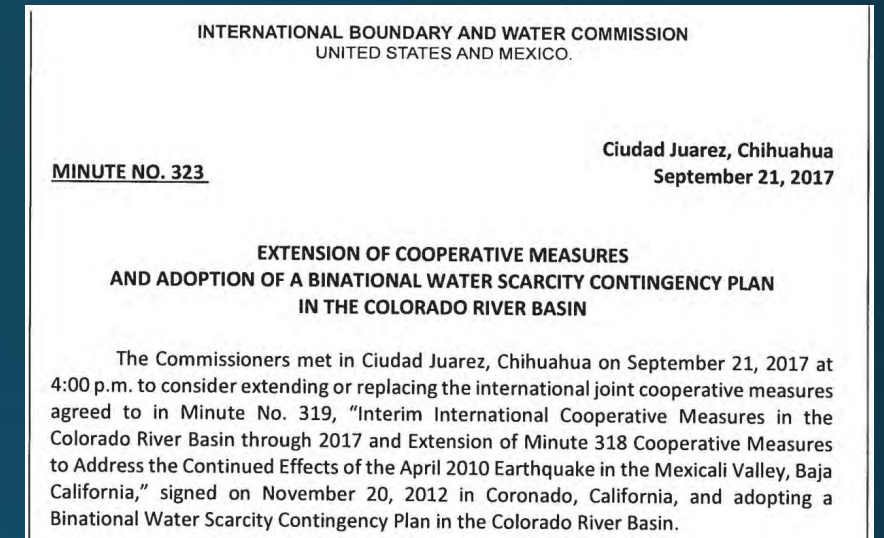
- Amendments

Colorado River

- Minute 323 Proportional reduction in water supply according to Lake Mead levels

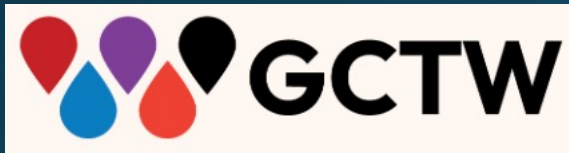
1906 Convention

- Proportional reductions in the event of an extraordinary drought



Vianey Rueda

vianeyr@umich.edu



Questions?