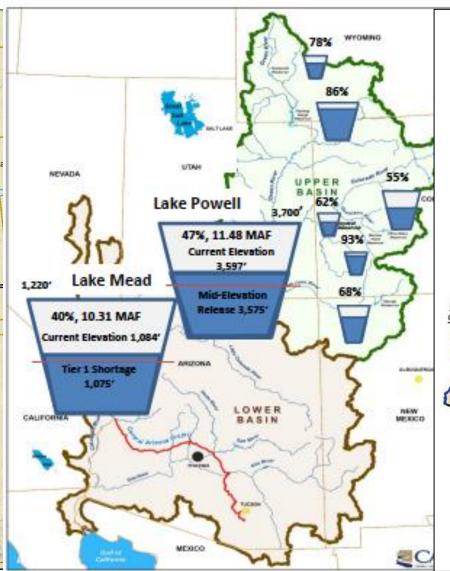


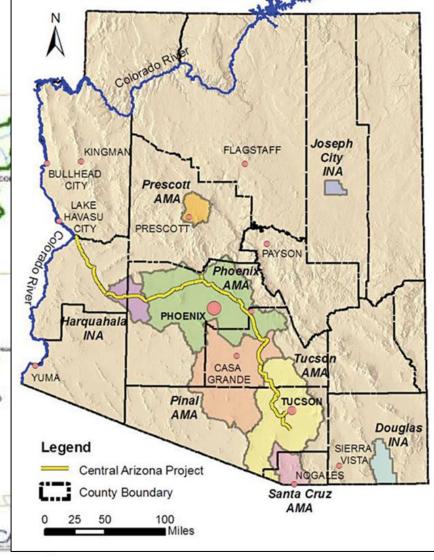
COLLEGE OF AGRICULTURE & LIFE SCIENCES COOPERATIVE EXTENSION

WATER RESOURCES RESEARCH CENTER

Panel 1 Question 1 Climate and Groundwater Sharon B. Megdal



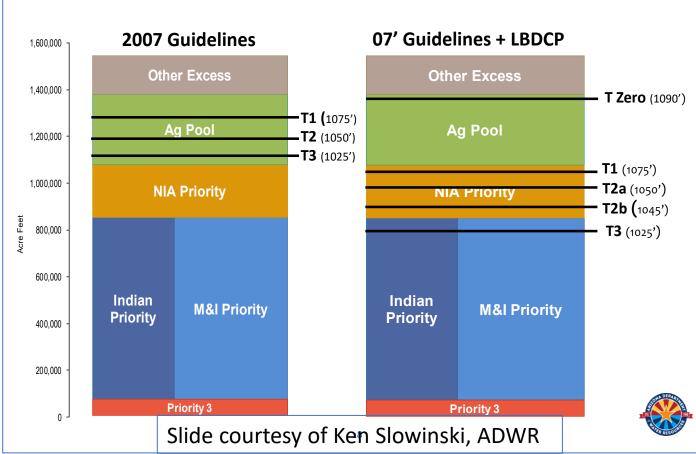






Panel 1 Question 1 Sharon B. Megdal







Panel 1 Question 2 Novel Hydro-diplomacy Sharon B. Megdal

English Text of Minute 242

INTERNATIONAL BOUNDARY AND WATER COMMISSION UNITED STATES AND MEXICO

Mexico, D.F. August 30, 1973

MINUTE NO. 242

PERMANENT AND DEFINITIVE SOLUTION TO THE INTERNATIONAL PROBLEM OF THE SALINITY OF THE COLORADO RIVER

MINUTE NO. 323

Ciudad Juarez, Chihuahua September 21, 2017

SSIMMISS STATER COMMISS COMISON INTERNACIONAL DE LIMITES AGUA

EXTENSION OF COOPERATIVE MEASURES

AND ADOPTION OF A BINATIONAL WATER SCARCITY CONTINGENCY PLAN
IN THE COLORADO RIVER BASIN

Panel 1 Question 2 Sharon B. Megdal

Earthquakes and Irrigation in the Mexicali Valley

Charles M. Burt, Ph.D., P.E., CID, CAIS

Chairman, Irrigation Training and Research Center (ITRC), California Polytechnic S University (Cal Poly), San Luis Obispo, CA 93407. cburt@calpoly.edu





Figure 10. Fissures in the embankment road. Photo courtesy of CONAGUA.

The modulos that suffered the most damage were Modulos 10, 11, and 12 (see Figure 11). The irrigation water to these modulos was supplied by the concrete-lined Nuevo Delta Canal (about 15 miles long), which was in turn supplied by the Reforma Canal, which receives its water from the Colorado River at Morelos Dam (Presa Morelos on Figure 11). The Nuevo Delta Canal was almost completely destroyed.

RESEARCH CENTER

Panel 1 Question 2 Sharon B. Megdal

Transboundary Aquifer Assessment Program – Minute 242

Transboundary Aquifer Assessment Program Aquifers of Focus Albuquerque California Arizona **New Mexico** Phoenix San Diego Fort Worth Dallas Mexical Las Cruce Tucson Texas Ensenada Baia Austin California Sonora Houston San Antonio Chihuahua PACIFIC Hermosillo OCEAN Chihuahua Legend Coahuila Gulf of Mexico Cities Nuevo U.S. - Mex. International Border León - State Boundaries Monterrey **Tamaulipas** Border-Region Watersheds 400 Arizona **New Mexico** Las Cruc Aquifer Hueco **Texas** Bolson Mesilla San Pedro Aquife Aquifer 0 5 10 20 m WATER RESOURCES RESEARCH CENTER Chihuahua 0 25 50 km Sonora

INTERNATIONAL BOUNDARY AND WATER COMMISSION

UNITED STATES AND MEXICO

El Paso, Texas August 19, 2009

JOINT REPORT OF THE PRINCIPAL ENGINEERS REGARDING THE JOINT COOPERATIVE PROCESS UNITED STATES-MEXICO FOR THE TRANSBOUNDARY AQUIFER ASSESSMENT PROGRAM

To the Honorable Commissioners, International Boundary and Water Commission, United States and Mexico, El Paso, Texas and Ciudad Juarez, Chibushus

irs:

We respectfully submit for your consideration this Joint Report recommending the joint cooperative process between the United States and Mexico to implement an assessment program for the transboundary aguifers shared by both countries.

. Background

Since the decade of the 1970s, there exists within the framework of the International Boundary and Water Commission (IBWC), a process for the exchange of information on groundwater along the border between the United States and Mexico. Any issues of data or studies have been addressed on a case by case basis through mutual consultation as established in Resolution 6 of IBWC Minute No. 242.

By way of example, on December 2, 1997, the IBWC issued the "Joint Report of Principal Engineers Regarding Information Exchange and Mathematical Modeling in the El Paso, Texas and Ciudad Juarez, Chihuahua Area Aquifer." The IBWC arranged for the exchange of groundwater data between both countries and the development of a bilingual publication that was produced jointly under this effort.

On December 22, 2006, United States Public Law 109-448, the "United States-Mexico Transboundary Aquifer Assessment Act" was passed, establishing a program to evaluate transboundary aquifers between the United States and Mexico, which included the possibility of applying United States funds for assessment activities in Mexico.

II. International Boundary and Water Commission's Position and Process Framework

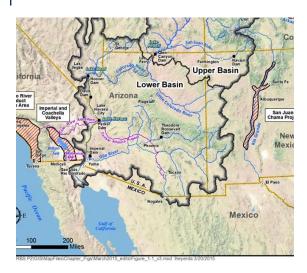
The IBWC, United States and Mexican Sections, are aware of the interest on both sides of the border to preserve and understand the aquifers used by both countries, whereby it is considered necessary to develop a team of binational experts to assess transboundary aquifers, exchange data, and if needed, develop new datasets.

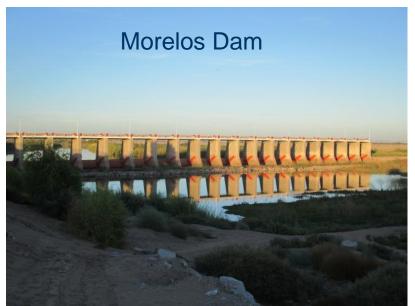
Initiatives that include transboundary water resources are traditionally coordinated through the IBWC using the customary binational cooperation process used by both



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Panel 1 Question 3 water-energy-food-climate-people nexus Sharon B. Megdal



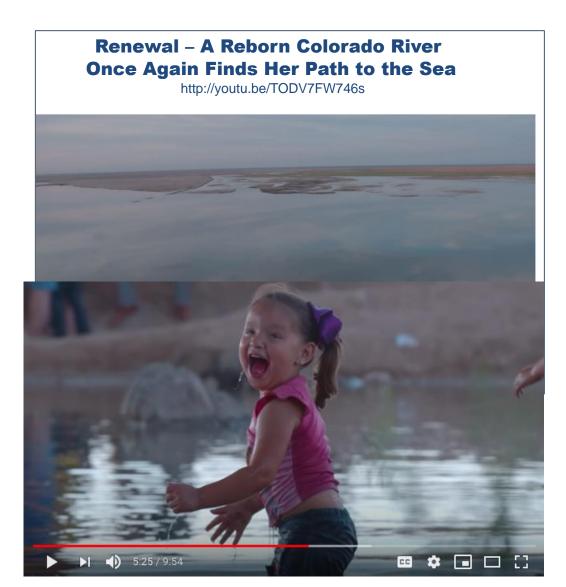


2014 Pulse Flow

- Occurred March 23rd May 18th, 2014.
- Designed to mimic, at a reduced scale, spring floods that affected the Colorado River Delta for years. Cottonwoods and willows were producing seeds during that time, and those seeds need to land on wet ground to germinate and support restoration goals of the Pulse Flow.



Panel 1 Question 3 Sharon B. Megdal





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WATER RESOURCES **RESEARCH CENTER**

Panel 1 Question 4 Challenges to water security Sharon B. Megdal



Tucson's heat, drought broke yet more records in September

ment," Mnuchin said afl briefing top Senate Resitive tone set by Pelosi improvement over ear-

still a considerable gulf onnell said. ovement, ves, and cerged," White House Chief

Democratic-controlled

sday night on a \$2.2 tril-

at would have been par-

and record-tying drought 30 monsoon season was also of creating record hot sum- form of drought condition

one-hundredth of an inch That aggravated a heat About 90% of Arizon wetter than the driest mon- wave already driven by long- is experiencing at least so

Brutal summer weather soon season on record, back term climate change, Crim- vere drought conditions, tl didn't let up in September, in 1924. mins said. Drought Monitor says. T with record-breaking heat The entire June 15-Sept. "That's that perfect storm entire state is under sor

pounding Tueson simulta- the warmest on record, pre- mer temperatures," he said. ranging from moderate

2020 Lake Powell **Unregulated Inflows**

The monthly inflows early in the runoff season (April - June) were about half of the 30-year Historical Average. July and August came in lower at 27% and -4% respectively.

August of 2020 was 2nd lowest August inflow since Powell filled in 1964, with lowest occurring in 2002.

The WY2020 unregulated inflow into Lake Powell is projected to be 55% of the historical average and potentially within the 10 lowest Powell inflows.

Note that 6 of the lowest 10 years of Powell inflows have occurred since 2002.

