

# The Lining of the All American Canal: *Effects on Mexico*

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In 1988, the U.S. Congress approved Law 100-675, authorizing the Secretary of the Interior to line the All-American Canal (AAC) along a 23-mile section in the southern Imperial Valley of California. Lining the canal was expected to save an estimated 70,000 acre-feet of water per year lost to seepage where the canal traverses sand dunes. The Mexican government quickly filed an informal complaint through the Mexican section of the International Boundary and Water Commission (IBWC), claiming potential harm to water users in the Mexicali Valley, and noting that the United States was legally obligated by Minute 242 to notify Mexico of any changes affecting groundwater along the border. The canal was never lined, but the international controversy was recently revived, sparked by a 2002 agreement between California's Department of Water Resources and the Imperial Irrigation District (IID) to guarantee \$126 million to build and line a 23-mile canal parallel to the AAC.

## ***Origins of the All-American Canal***

The history of the AAC is rooted in the quest for water spurred by the agricultural development of the Imperial and Mexicali valleys in the early 20th century. The California Development Company, founded in 1896, undertook the first project to supply the area with water from the Colorado River. Technical problems associated with transporting water through U.S. territory resulted in the use of a binational channel in the Mexicali Valley—the Alamo Canal—operated by a Mexican subsidiary, Sociedad de Terrenos e Irrigación de Baja California. Beginning in 1901, the operation of the Alamo Canal provided both valleys with

7.3 million acre-feet (maf) annually in equal parts, creating high expectations for the economic transformation of the region.

The Alamo Canal experienced a number of difficulties in the years that followed. An inability to control canal volumes from the Colorado River resulted in a series of floods from 1905 to 1907, affecting the cities of Mexicali and Calexico and agricultural areas on both sides of the border, and creating the Salton Sea. These conditions, together with the dependence of the canal operation on Mexican policy changes, moved Imperial Valley users to lobby for their own access to the Colorado. Once created in 1911, the IID began to advocate building an "All-American Canal" north of the international border. These efforts paid off with passage of the Boulder Canyon Project Act in 1928, which included construction of the Imperial Dam. The AAC was built in the 1930s, becoming the main source of water for the Imperial Valley by 1942.

The AAC now delivers approximately 3.1 maf of Colorado River water annually to nine cities and 500,000 acres of agricultural fields in Imperial Valley (see cover image). It extends southwest 82 miles from the Imperial Dam to a point just 10 miles west of Calexico. Most of its path runs close to the international border with Mexico, particularly through the sand dunes near Pilot Knob, where the border is only 500 feet away.

## ***Groundwater, Social, and Environmental Impacts***

Studies by Mexican researchers have identified a number of impacts that lining the canal would have on Mexican areas.

*Construction of the All-American Canal, 1935 (top), 1939 (bottom), and 1936 (background). Courtesy of U.S. Bureau of Reclamation.*



Most evident is a potential decrease in static levels of the Mexicali Aquifer, which depends mostly on AAC seepage for recharge in areas near the canal (Herrera et al., 2004). It is estimated that the aquifer would be short 67,000 acre-feet of water per year if the AAC were lined. The impacts of this would be significant, given the importance of groundwater to agricultural production in the Mexicali Valley. Additionally, groundwater salinity is expected to increase if the canal is lined, as seepage from the AAC contributes significantly to lower the concentration of suspended solids in the aquifer (Herrera et al., 2004; García-Saillé et al., 2004). The higher salinity is likely to affect the productivity of less salt-tolerant crops.

Other economic and social effects of potential water quality deterioration must be considered. For instance, 1,010 families that reside in areas identified as most directly dependent on AAC seepage rely on the water from the aquifer for domestic uses. In the absence of any mitigation measures, these groups will eventually seek relocation in Mexicali's urban area. This migration could cause water providers

in Mexicali to accelerate their reliance on water reserves, which incidentally are based on groundwater allotments.

Environmental effects of the lining project on Mexican sections close to the AAC are also often overlooked. While the environmental impact study conducted by the Sonoran Institute (2005) emphasizes the loss of wetlands formed by AAC seepage on the U.S. side—about 1,570 acres—an important wetlands system more than three times that size has evolved in the Mexican zone known as the Mesa de Andrade. In all, at least 100 bird species reside there, including several under federal protection in the United States and Mexico. These wetlands serve also as a migratory rest area for more than 10,000 birds each year.

### Mexico's Two Alternatives

Although the issue is complex, Mexico and the United States could still reach an agreement on lining the AAC. One option calls for Mexico to appeal to the international courts to consider the issue an international rather than a domestic matter. However, binational cooperation seems to offer the best hope, provided both parties are motivated to share information and work together to manage the water resources rather than compete for their appropriation.

Several examples of shared interest and successful binational cooperation already exist which could serve as models. Governments and communities on both sides of the border are working jointly to save the Lower Colorado Delta and preserve its biodiversity. Additional cooperation has occurred with the Rio Nuevo restoration in the Mexicali area, the construction of a binational aqueduct on Mexican territory to transport Colorado River water to San Diego and Tijuana, and a new international agreement to build a secondary wastewater treatment facility in Tijuana to solve water contamination problems in the area.

### A Final Word

The decision to build a parallel lined channel originated from concerns over urban water needs in Southern California. A binational conflict arose in the process, due to negative impacts on the Mexican side and the one-sided nature of the action, which violated the precepts established by Minute 242. This polarization has been aggravated by the complexity of the issue and lack of negotiation. However, recent examples of environmental cooperation between Mexico and the United States demonstrate that mutually satisfying solutions are possible when competition and unilateral action give way to cooperation. Both countries have recently

resumed talks on the issue, reconsidering potential negative impacts on the Mexican side and discussing ways to either mitigate those effects or compensate for the losses. This is surely a more promising approach for the future, with sustainable management of resources as our mutual goal.

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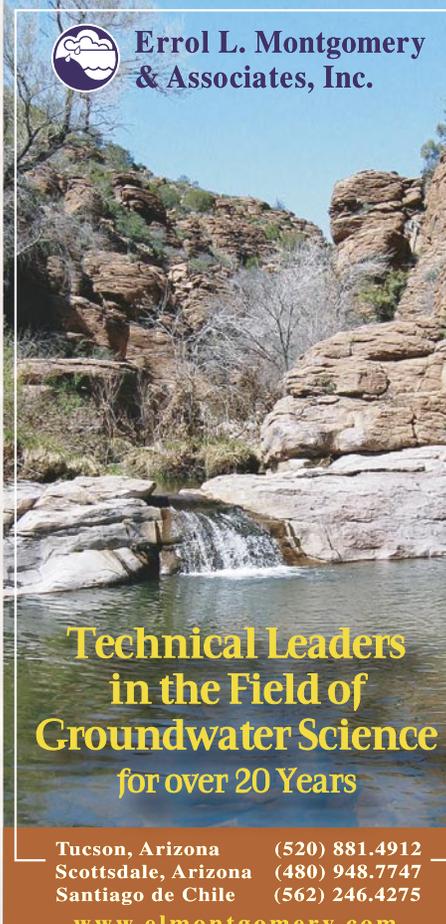
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