

Recent Developments on the Colorado River: Implications for Mexico

Steve Cornelius – Sonoran Institute, Peter Culp – Squire, Sanders, and Dempsey, LLP, Jennifer Pitt – Environmental Defense, and Francisco Zamora – Sonoran Institute

During the past year, the Colorado River has been impacted by politics, legal wrangling, and natural water shortages in ways that have direct implications for the future of the delta in Mexico. The collective influence of these developments on one of the largest desert deltas in the world remains to be seen. What is clear, however, is that the events are exacerbating historical tensions between the United States and Mexico over interpreting and implementing the U.S.-Mexico Water

Treaty of 1944 and among municipal and agricultural interests in the two countries. The formulation of a comprehensive and politically sustainable plan to restore and conserve the delta as a functional ecosystem must take these developments into account.

Agreement to Reduce Overuse by California

The recently signed Quantification Settlement Agreement (see page 11) reallocates user rights to Colorado River water in California, and is a key element of a complex plan to gradually eliminate California's dependence on "surplus" water beyond its annual legal entitlement of 4.4 million acre-feet. The agreement is an essential precondition to implementing the Interim Surplus Criteria, which will guide the gradual reduction of the state's overuse during the next 15 years, assuming drought conditions do not trump access to surplus. The unlined All-American Canal, which has been leaking an estimated 60,000 acre-feet of water per year across the border, will be lined; this is one of several actions designed to improve efficiency of water use in the Imperial Valley and free up water for urban users. Efforts to mitigate the environmental impacts of agricultural to urban water transfers on the Salton Sea will also be necessary and expensive.

Implications for Mexico: *Certain elements of this plan were contested by Mexico because they will likely result in reduced subsurface percolation to Mexican fields and wetlands and reduced flood pulses across the border.*

Basin-Wide Drought and Increase in Competition for Supply

The Colorado River Basin is clearly experiencing a long-term drought. Reservoirs are at critically low levels, and

the resulting uncertainty has once again brought water supply issues to the political forefront, with debates over entitlements to the Colorado River receiving substantial, high-level political attention. Even as supplies diminish, demand for Colorado River water continues to expand. The Upper Basin states will significantly increase their water use over the next 60 years, further threatening Lower Basin resources. At the same time, growing municipal use in the Lower Basin continues to stress supplies. For example, Nevada has put in a claim for extra water to prevent municipal shortfalls and is paying residents to eradicate grass lawns. Lower Basin users also face new competition from Indian water users: the Navajo Nation recently filed a lawsuit challenging, among other things, the apportionment of Colorado River water and questioning the legality of Arizona's water banking program.

Implications for Mexico: *There will be significant pressure to meet state entitlements and allocate any surplus water that becomes available to rebuild depleted supplies in the Lake Powell and Lake Mead reservoirs and prevent domestic shortfalls. These increasing demands in the United States will inevitably curtail flows to Mexico and the delta. Hydrologic modeling studies conducted by the U.S. Department of Interior (DOI) recently concluded that flows downstream of the Morelos diversion dam in Mexico were certain to be less than 20,000 cubic feet per second (cfs) for every year from now through 2060. Furthermore, DOI found the probability of periodic floods sufficient to maintain native forests along the river channel (approximately 250,000 acre-feet) has decreased to less than 15 percent.*



Colorado River Delta wetlands (top); photo by Osvel Hinojosa-Huerta. Ciénega de Santa Clara, a 14,000-acre wetlands (bottom); photo contributed by Steve Cornelius.

Yuma Desalination Plant Re-Operation

Under the Treaty of 1944, the United States is obligated to control the salinity of the Colorado River water delivered to Mexico. Since the 1970s, the United States has met this obligation by annually bypassing 110,000 acre-feet of saline wastewater to the Ciénega de Santa Clara, where it supports a 14,000-acre emergent wetland. The bypassed water is not counted against the 1.5 million acre-feet of water that the United States is obligated to deliver to Mexico under the treaty.

The Colorado River Basin Salinity Control Act authorized construction of the Yuma Desalting Plant (YDP) to treat this drainage water and thus minimize losses to Mexico. As a temporary measure, the bypass water had been offset by water conserved in the lining of the Coachella Canal in California. With deliveries to California being curtailed, this offset water no longer is available, provoking renewed interest in operating the YDP. Under pressure from certain Arizona users and some proposed report language from Congress, DOI now supports operating the plant to improve upstream storage, control salinity, and resolve the system shortage resulting from the bypass.

***Implications for Mexico:** If the YDP becomes operational, the Ciénega de Santa Clara will be significantly affected by a 60 percent or greater decrease in flow. This largest remaining wetland in the delta would shrink dramatically. Combined with a three- to four-fold increase in salinity levels, most of the cienega's vegetation would be lost, along with many species of fish and birds that depend on this critical habitat.*

Defenders of Wildlife v. Norton

In June 2000, Defenders of Wildlife and several allied organizations sued DOI and other federal agencies, alleging the Endangered Species Act had been violated with respect to protected species in the Colorado River Delta. The essential premise of the Defenders case was that DOI maintained sufficient discretion over lower Colorado River operations

to require it to consider the impacts of those operations on endangered species in the delta. In March 2003, a federal court rejected this theory, finding that under the terms of the Treaty of 1944 and the Law of the River, DOI has no discretion to release additional water to Mexico.

***Implications for Mexico:** Several efforts have been made in recent years to identify mechanisms by which DOI or private parties could move water across the international border for the benefit of the delta, while respecting the parameters of existing treaties and water markets. As a result of this court decision, moving additional water across the border will be difficult without a new international*

Absent affirmative, cooperative political action by the governments of the United States and Mexico, it seems likely that both the quantity and quality of water available to support the Colorado River Delta will continue to decline.

agreement that authorizes DOI to permit such voluntary deliveries.

Channel Straightening, Vegetation Clearing

The International Boundary and Water Commission has proposed two related projects for the 23-mile long stretch of river shared by Mexico and the United States. Both will impact riparian vegetation and the hydrology of the river and delta. The first of these projects, the Lower Colorado River Boundary Project, would define and maintain the border in the shared stretch of river through channelization. The second project, known as the Flood Control Project,

would expand and maintain the flood-carrying capacity in the area between the levees in the boundary section of the river and downstream to guard against flooding of surrounding agricultural lands. An environmental impact statement is expected to be released by early 2005. These projects would increase the capacity of the channel from the current 12,000 cfs to 14,000 cfs and the flood plain capacity (levee to levee) to 141,000 cfs, despite the low probability of flows reaching these levels over the next 10 to 15 years.

***Implications for Mexico:** These projects would eliminate trees, shrubs, and emergent vegetation in the riparian zone, greatly diminishing the value of the corridor for migratory birds and threatening the integrity of the Pacific Flyway. Loss of habitat would also impact resident fish and wildlife populations. Channelization would increase flood pulse velocity, reducing opportunities for riparian recruitment and nourishment of off-channel wetlands. The impacts of the two projects appear incompatible with a recent initiative by the Cucapá Indian Tribe and others to establish an international conservation area in this area.*

Need for Continued Cooperation

Overall, the past year has seen dramatic increases in the pressures exerted on the lower Colorado River's diminishing resources and in the political visibility of water issues. Absent affirmative, cooperative political action by the governments of the United States and Mexico, both the quantity and quality of water available to support the Colorado River Delta will likely continue to decline. As described elsewhere in this issue, many organizations are working together to seek creative means to counter this trend, to find sources of water that can be leased or purchased for maintaining flow to the delta, and to design legal and politically acceptable mechanisms to ensure water for the environment. Success in this effort will benefit the shared resources and residents of both countries.

Contact Steve Cornelius at steve@sonoran.org or visit www.sonoran.org.