

Briefing Document...

Colorado River Basin Salinity Control Program

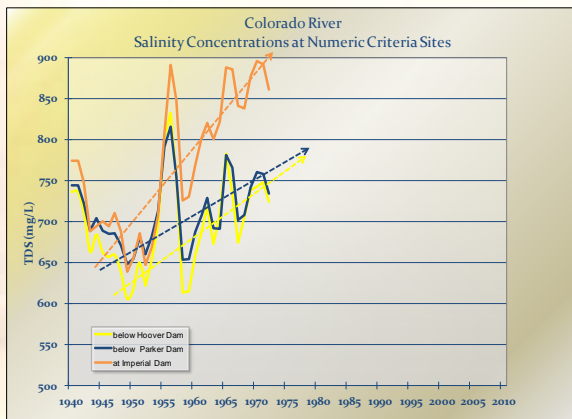
Background

The Colorado River flows more than 1400 miles from its headwaters in the Rocky Mountains through portions of seven states and the Republic of Mexico before it discharges into the Gulf of California. Through natural and man-induced causes, it picks up and dissolves salt along its path from about 50 mg/L at its source to nearly 850 mg/L (present concentrations) as it passes from the United States into Mexico.

Historically nearly 10 million tons of dissolved salts have passed down the river annually below Hoover Dam. The significant salt load creates environmental and economic damages to its users. The Colorado River is used by approximately 35 million people for domestic and industrial uses in the United States and is used to irrigate approximately 4 million acres of

land. Modeling by Reclamation shows that the quantifiable damages from high salinity water are several hundred million dollars per year to U.S. users with projections that damages would rise to more than five hundred million by 2030 if the Program were not to continue.

The early 1970s saw significant concern by US water users over the increasing Colorado River salinity concentrations, as well as issues between the United States and Mexico over the quality of water being delivered to Mexico pursuant to the treaty between the countries. These concerns, coupled with the passage of the Clean Water Act amendments in 1972 and concerns over EPA mandating state-line water quality standards, led the seven Colorado River Basin states to work with Interior agencies, the State Department and Congress in passage of the Colorado River Basin Salinity Control Act (Act, 1974). Now,



nearly four decades later, this unique partnership of federal and state agencies continues to work cooperatively with hundreds of local companies and thousands of individual water users to control the salinity levels of this major river while allowing development and usage of its waters pursuant to the Colorado River Compact. The salt load of the Colorado River has now been reduced by about 1.2 million tons annually, but continuance of the program is required to offset what otherwise would be increases in salinity levels.

Sources of Salinity

Much of the Upper Colorado River Basin is underlain by geologic formations composed of sediments which were deposited or precipitated in ancient inland seas and water ways which concentrated salts in these formations. The passing of water through these formations or their derived soils, either naturally or through human activity, dissolves and mobilizes these salts. EPA has identified that 62% of the salt load of the Colorado River above Hoover Dam comes from natural sources. With the significant federal ownership in the Basin, most of this comes from federally administered lands. Human activity, principally irrigation, adds to the salt load of the Colorado River. Further, natural and human activities concentrate the dissolved salts in the River. Such activities include out-of-basin exports, crop and other consumptive uses, phreatophytic evapotranspiration and evaporation from reservoir surfaces.



Colorado River Salinity Standard

In 1974 EPA adopted, and in 1975 the seven Colorado River Basin states adopted, a salinity standard for the Colorado River. That standard is composed of numeric criteria for total dissolved solids and a plan of implementation to meet the criteria. The numeric criteria were selected as the 1972 salinity levels at the three Lower Basin monitoring locations: below Hoover Dam, below Parker Dam and at Imperial Dam. The Plan of Implementation is designed to keep the average annual flow-weight salinity concentration at or below the 1972 levels while allowing continued use and development of waters upstream. In 2011 the seven Colorado River Basin States reviewed and adopted a revised standard with an updated Plan of Implementation. The Plan of Implementation calls for the creation of an additional 644,000 tons of annual salinity control practices by 2030.

Program Partners

Department of the Interior

Bureau of Reclamation*

Bureau of Land Management*

US Geological Survey

Fish and Wildlife Service

Department of Agriculture

Natural Resources Conservation Service*

US Environmental Protection Agency

State of Arizona

State of California

State of Colorado

State of Nevada

State of New Mexico

State of Utah

State of Wyoming

Literally hundreds of water districts, water user organizations and canal and ditch companies, as well as thousands of individual water users and producers.

* Implementing agency

Program Implementation

Implementation of the Program occurs principally through off-farm irrigation water delivery improvements implemented through Reclamation's Basinwide Program or on-farm irrigation improvement practices implemented through NRCS' Environmental Qualities Improvement Program (EQIP). Additional, salinity control is achieved through BLM practices and administration of NPDES permits by the states. Reclamation's Basinwide Program is a grant program under a funding opportunity announcement every two or three years. Potential participants make application to Reclamation and awards are granted based on cost-effectiveness and other factors. Most applications consist of canal and ditch lining or piping practices. Annual appropriation is about \$7 million. Under EQIP, NRCS assists producers with improvements to their on-farm irrigation practices – generally improving flood irrigation systems or providing sprinklers in the form of side rolls or center pivots. Reduced seepage from canals and laterals or reduced deep percolation from farm fields decreases the amount of dissolved salt which seeps to the Colorado River and its tributaries.



Cost Share

The Act requires that the states cost share up front 30% of the total cost of the practices implemented by Reclamation and NRCS. For example, if Reclamation were to implement \$10 million in practices under its Basinwide Program, then \$7 million would come from appropriated dollars and \$3 million would come from cost-share dollars. Alternatively said, the cost-share dollars are three-sevenths of the appropriated dollars (or 43%). That means that for every dollar appropriated to the Program, whether to Reclamation or NRCS, an additional 43 cents of cost share is added to the effort. It is important to remember that the required cost-share dollars are on a percentage of the appropriated dollars. Therefore, if the appropriated dollars are reduced, the cost share will automatically be reduced. In addition to the state cost-share dollars, under NRCS' EQIP, producers often contribute about 25% of the total cost of the improvements. Under Reclamation's Basinwide Program, applicants often expend meaningful dollars to buy down their projects to make their proposals more cost-competitive.

Program Needs

Reclamation's Basinwide Program

- Increases in funding levels to keep current with program needs and to integrate efficiently with NRCS' EQIP efforts

NRCS' EQIP

- Continuation of present funding levels and technical assistance to assist producers to implement and maintain practices

BLM

- Development of "a comprehensive program for minimizing salt contributions to the Colorado River from lands administered" by BLM and sufficient funding to implement such

Legislative History

1974 PL93-320

- Colorado River Basin Salinity Control Act (Act)
- Title I deals with waters below Imperial Dam and the US commitment to Mexico
- Title II created the Colorado River Basin Salinity Control Program and directed the Secretary of the Interior to implement salinity control projects

1984 PL 98-569

- Authorized the Secretary of Agriculture to establish a voluntary cooperative salinity control program
- Directed the Secretary of the Interior “to develop a comprehensive program for minimizing salt contributions to the Colorado River from lands administered by the Bureau of Land Management”

1995 PL 104-20

- Changed Reclamation’s program to the Basinwide Program to implement salinity control through competitive grants rather than large Reclamation projects

1996 PL 104-127

- Combined the USDA Colorado River Basin Salinity Control Program with three other programs under EQIP
- Authorized up-front cost sharing

2008 PL 110-234

- Created the Basin States Program through which the cost-share dollars are to be expended

Colorado River Basin Salinity Control Forum

The Colorado River Basin Salinity Control Forum was created by the seven Colorado River Basin states in 1973 to act as a common voice for the states on salinity matters and to coordinate with federal agencies in the implementation of the Program. Forum membership consists of appointees from each of the governors of the Colorado River Basin states and includes water quantity and water quality agency leads and representatives from major water user organizations.

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Colorado River Basin
**SALINITY
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