



Salinity in the Colorado River Basin

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Colorado River System

- The Colorado River
 - Supplies water to over 40 Million people
 - Irrigates over 5 million acres of farmland
 - Includes 30 Tribes
- Sources of Colorado River Supply
 - Winter and Spring Frontal Systems
 - Warm Winter Storms
 - Summer Monsoons

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Salinity Legislation

- 1974 Colorado River Basin Salinity Control Act
 - Title I Below Imperial Dam, Commitment to Mexico
 - Title II Colorado River Basin Salinity Control Program
- Adopted baseline salinity levels at the three Lower Basin monitoring locations:
 - o below Hoover Dam (723 mg/L),
 - below Parker Dam (747 mg/L)
 - o @ Imperial Dam (879 mg/L)
- Additional agreements and amendments

	Public Law 104th Cong To amend the C measures to c cost-effective m Be it ena the United St SECTION 1. AM C C	104–20 ress An Act olorado River Basin Salinity Contra rry out the control of salinity ups amer, and for other purposes. cted by the Senate and Hou tes of America in Congress ass EENDMENTS TO THE COLORAD ONTROLACT. ado, River Basin Salinity Con	ol Act to authorize additional stream of Imperial Dam in a use of Representatives of sembled, O RIVER BASIN SALINITY htrol Act (43 U.S.C. 1571	_July 28, 1995 [S. 523]
	er sen. Ets ame	nded—		43 USC 1592.
PUBLIC LA w 98–569 gress	W 98-569—OCT. 30, 1984 An Act	98 STAT. 2933	salinity control units" nity control units and and inserting a colon; owing new paragraph: rogram that the Sec- lamation, shall imple- purposes of this para- mitments for grants, ties under such terms owies. Such program	
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n paragraph (1) f the following: atal fish and wild	Colorado River Basin Salinity Con- trol Act. 43 USC 1571 note.	Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That this Act may be cited as the "Colorado River Basin Salinity Control Act". TITLE I—PROGRAMS DOWNSTREAM FROM IMPERIAL DAM		
	SEC. 101. (a) The Secretary of the Interior, hereinafter referred to as the "Secretary", is authorized and directed to proceed with a program of works of mprovement.43 USC 1571.Water quality im- provement.43 USC 1571.Water quality of water available in the Colorado River for use in the United States and the Republic of Mexico, and to enable the United States to comply with its obligations under the agreement with Mexico of August 30, 1973 (Minute No. 242 of the Inter- national Boundary and Water Commission, United States and Mexico), con- cluded pursuant to the Treatry of February 3, 1944 (TS 994), in accordance with the provisions of this Act. (b)(1) The Secretary is authorized to construct, operate, and maintain a desalting complex, including (1) a desalting pomplex. (hereinafter referred to as the division), including a pertreatment plant for set- tling, softening, and filtration of the drain water to be desalted; (2) the necessary appurtenant works including the intake pumping plant system,			

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Colorado River Salinity Control Program, Forum, and Advisory Council

- Salinity Control Program is a cooperative effort of federal and state agencies to meet salinity objectives in the basin
- Salinity Control Forum was created to coordinate the salinity programs with federal government and among the states
- Advisory Council was created out of the Basin Act, and is a federal advisory committee







Salinity Sources and Impacts

- Salinity sources are both natural and humanderived
- At Hoover, around 3.5 million tons of the salt is from underlaid geologic formations
- Irrigation contributes most man-made salt to the river, with other activities such as evaporation also increase concentrations
- Present concentration of salinity
 - o 50 mg/L at its source
 - **850 mg/L** at border to Mexico
- Salinity decreases crop efficiency and soil viability, and increased infrastructure damage and treatment costs



Accomplishments of the Program

- Salinity control implemented through:
- Off-farm irrigation water delivery improvements
- On-farm irrigation improvement through NRCS
- Other large-scale projects
- To date the program has implemented more than 1.33 million tons of annual salinity control.
- 51,700 tons of annual salinity control be implemented over the next three years





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Binational Salinity Agreements

1944 Water Treaty with Mexico

• Minute 242

 Defines salinity differential between Imperial and Northerly International Boundary

• Minute 323

 Manage salinity compliance operations so that river operational changes made as part of these agreements will not reduce Arizona's return flows.



Lower Colorado River Water Quality Partnership

Partnership between Central Arizona Project (CAP), Metropolitan Water District of Southern California (MWD), and Southern Nevada Water Authority (SNWA)

The Goal

Protecting the River's water quality is of paramount importance. The Partnership works to identify and implement proactive, collaborative solutions to address water quality issues of the Colorado River. This is achieved through three objectives:

- 1. Identify the challenges currently facing the River,
- 2. Collaborate on research and policy analysis, and
- 3. Develop initiatives and solutions to ensure the River's future health and sustainability.



Key Takeaways

- Rising salinity levels in the Colorado River Basin led to congressional action in the 1970s
- The 1974 Salinity Control Act led to the creation of the Colorado River Salinity Control Program, Salinity Control Forum, and the Advisory Council
- Collaborative efforts through the Binational Salinity Agreements and the Lower Colorado River Water Quality Partnership are critical to future water quality protection.

