Colorado River Basin Salinity Control Program

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Colorado River Basin Salinity Control Forum

INTERNATIONAL BOUNDARY AND WATER COMMISSION

January 22, 2020

Yuma, AZ

Colorado River Basin SALINITY CONTROL FORUM

Facts/Results:
The Colorado River Basin Salinity Control Program…

- reduced the annual salt load by about 1.31M tons
- reduced the downstream concentration 100 mg/L
- reduced quantified damages by approximately $300 million annually
- $50/ton

Facts:
The Colorado River Basin Salinity Control Program…

- existed for 40 plus years
- all told, more than one billion dollars spent (including federal appropriations, Basin States cost share cost share by program participants)

Colorado River Basin Salinity Control Forum

IBWC - Salinity Program Report

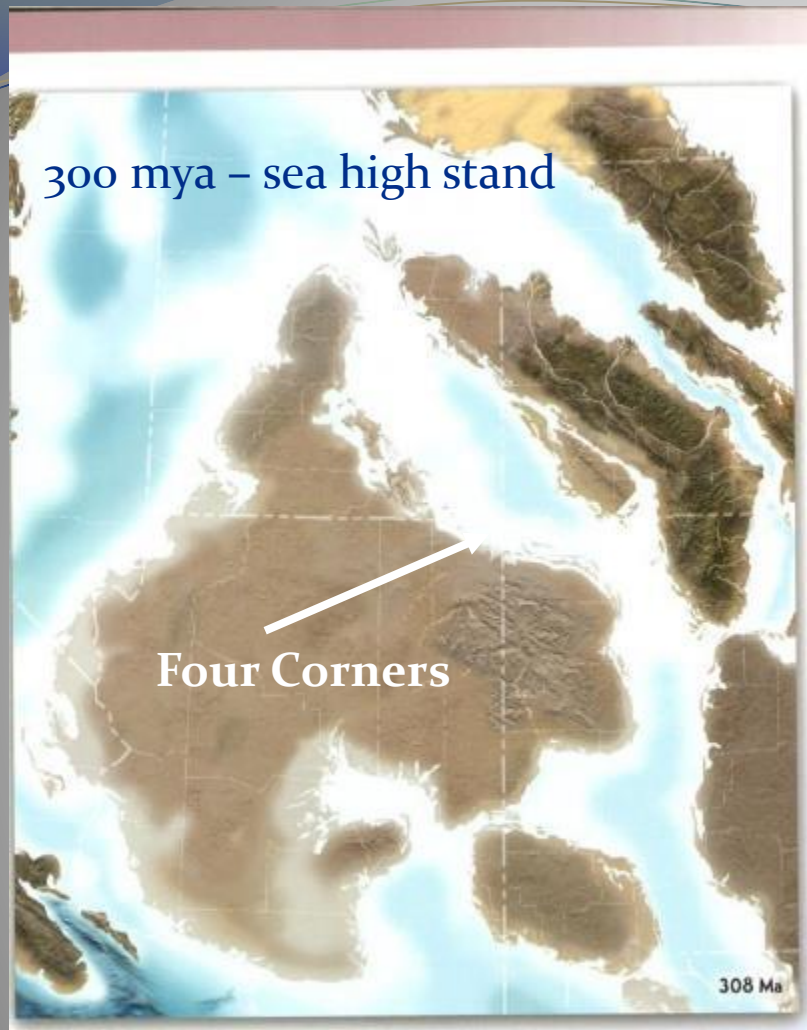
- Why We Have a Salinity Control Program
- Genesis of the Program
- Program Overview/Implementation
- Program Funding
- Salinity Damages
- Program Successes

Colorado River Basin
SALINITY
CONTROL FORUM

About 300 mya – formation of Pangea super continent

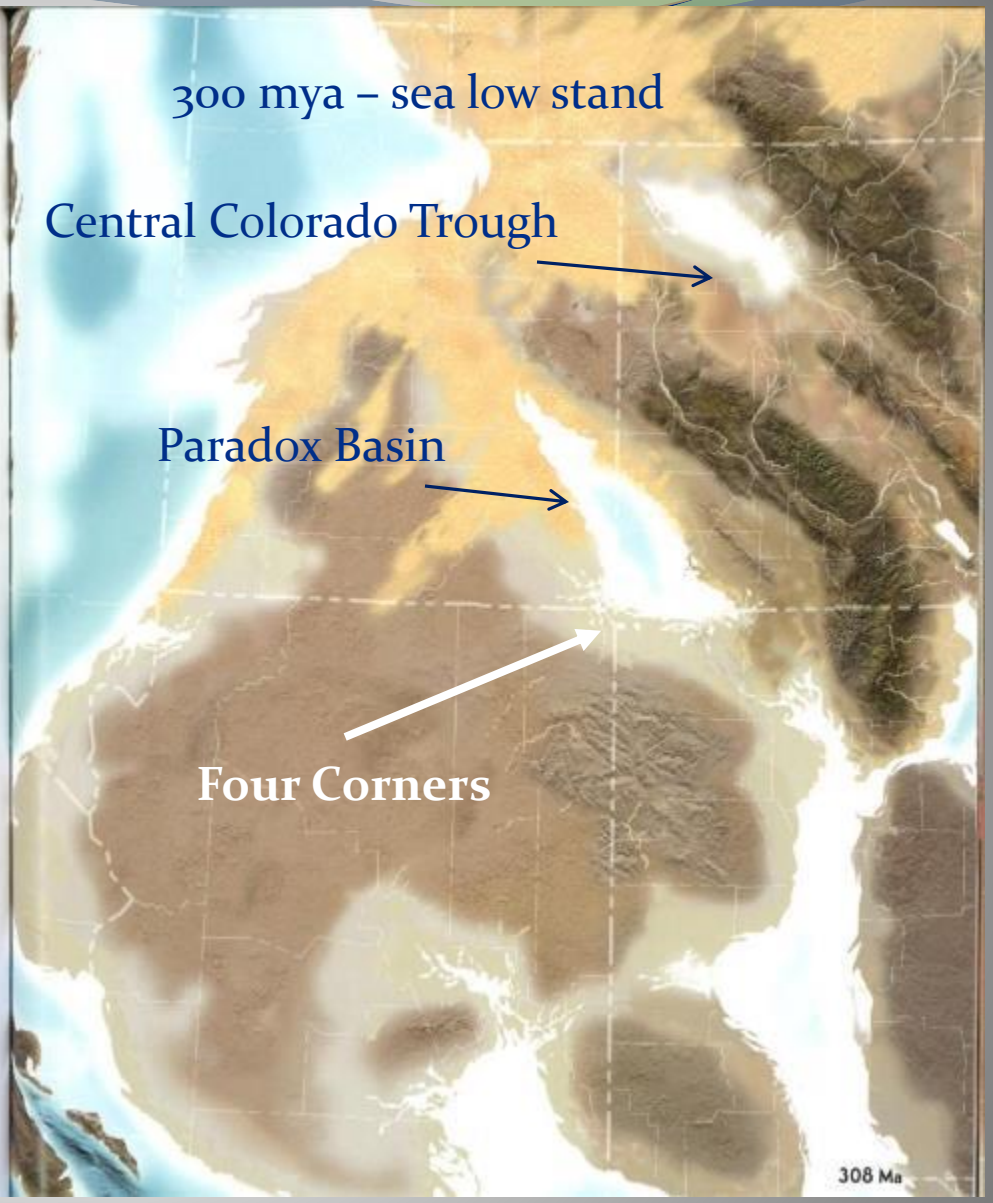
(paleogeographic map from Blakey and Ranney, 2008)

Colorado River Basin SALINITY CONTROL FORUM



Above: Middle Pennsylvanian paleogeography (308 Ma). This map shows deposition during a sea level high. In southwestern Colorado and southeast Utah, normal marine deposits of the Paradox Formation were preserved.

Opposite: Middle Pennsylvanian time (308 Ma) during low sea level. The Paradox and Eagle basins became the sites of isolated seas (like the modern Caspian Sea), and large amounts of salt precipitated in the warm, restricted water. Calculations suggest a 400–600 foot difference between high and low sea levels, and the changes may have occurred rapidly in less than 200,000 years. As many as sixty cycles have been documented and resulted from fluctuating glaciations in the Southern Hemisphere.



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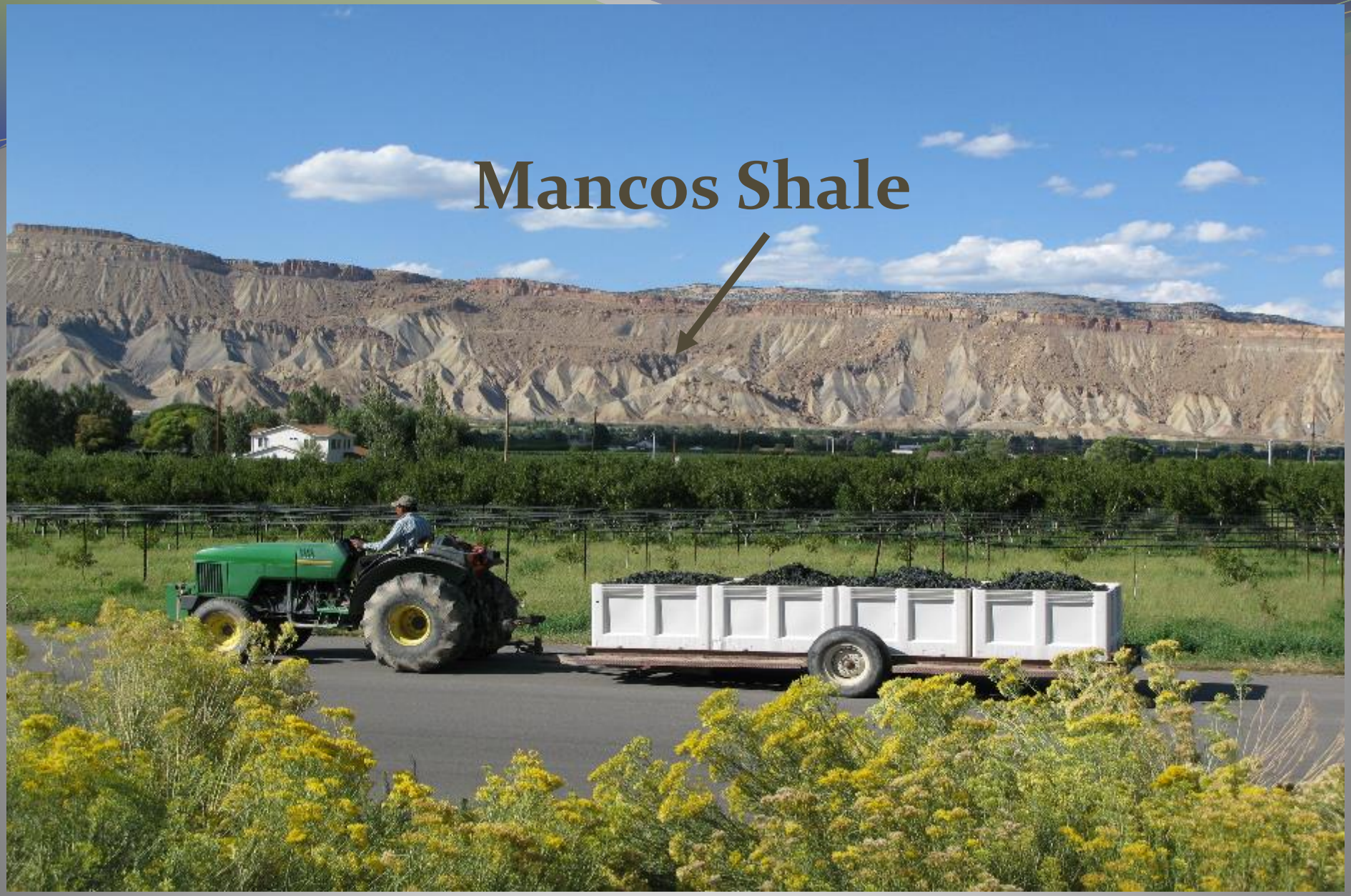
(Paleogeographic map from Blakey and Ranney, 2008)

Overlying Bedrock
Paradox Evaporite Diapir
Roaring Fork River

About 100 mya – transgression of Western Interior Seaway

Deposition of 1000's of feet of salty marine shale

SALINITY CONTROL FORUM



Grand Valley, Colorado

Colorado River Basin
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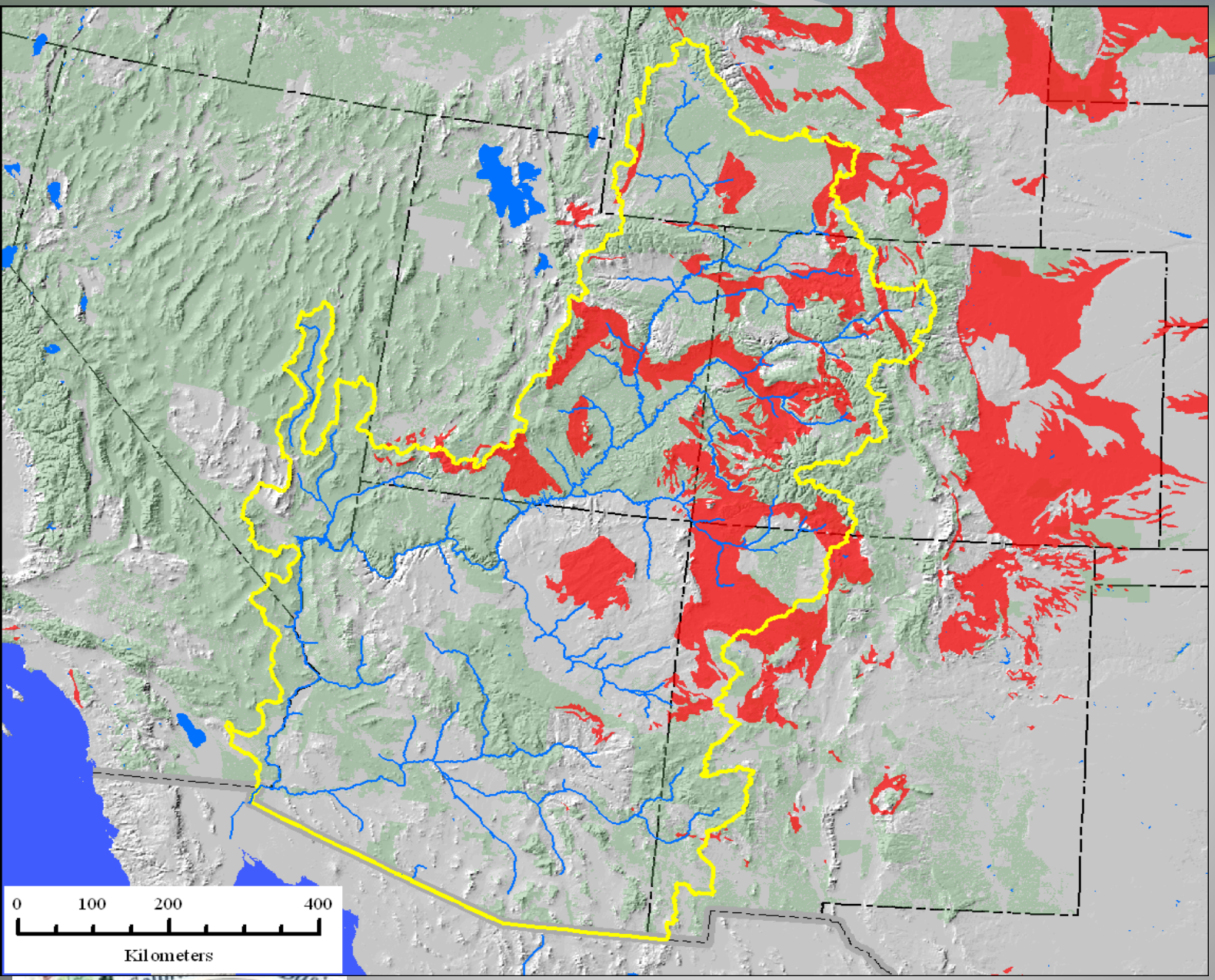
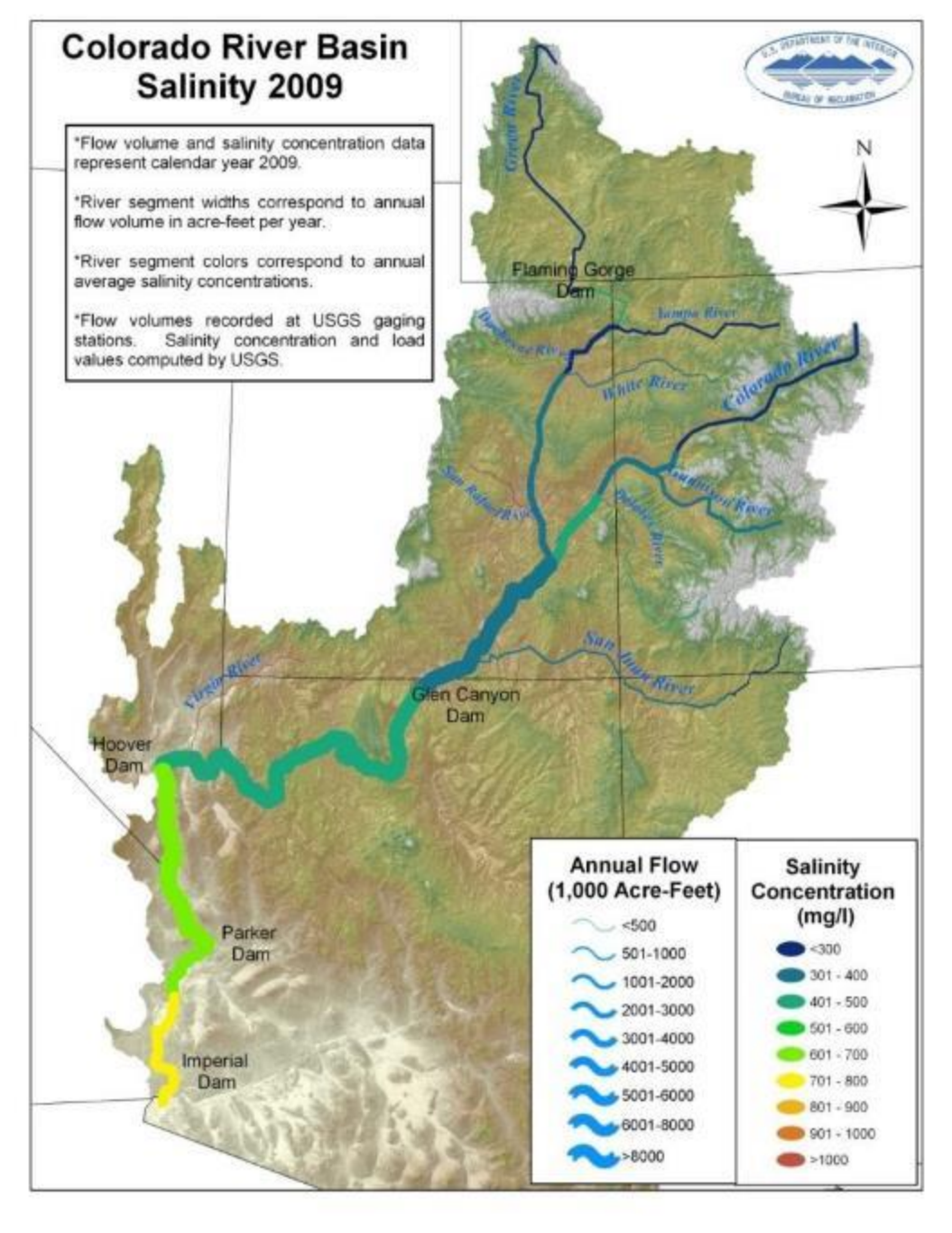


Colorado River Basin

Mancos Shale

Colorado Basin Salinity Control Forum

The Colorado River's salinity concentration increases from about **50 mg/L to 800 mg/L** as it flows from its headwaters to the lowest diversion in the United States



Colorado River Basin SALINITY CONTROL FORUM

Tale of Two Rivers

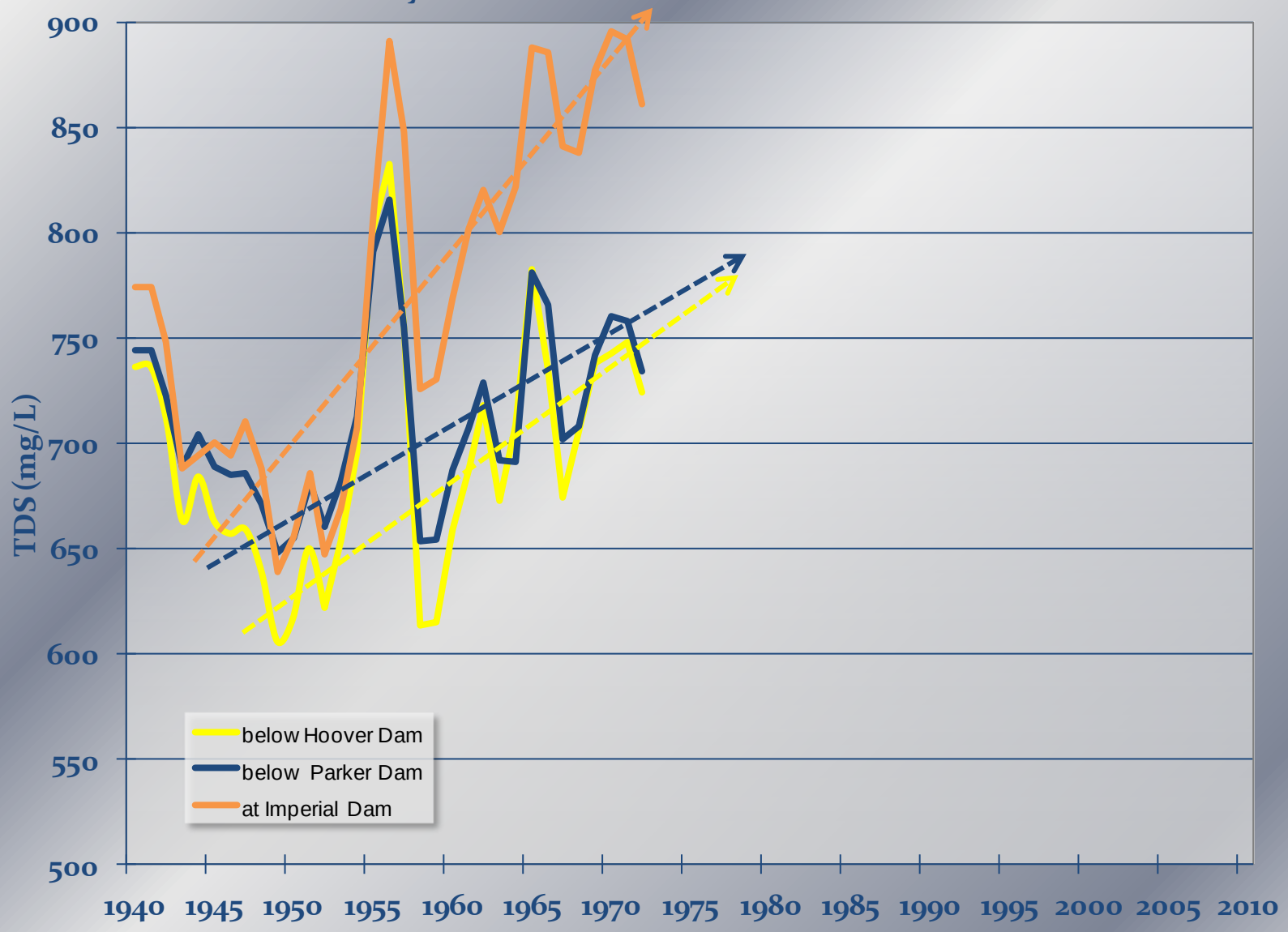
Upper Basin

- Good Quality Water
- Limited M&I Usage
- Often High Spring Water Supply
- Marginal Farm Economic Output
- Underlain by Saline Soils

Lower Basin

- Significant M&I Usage
- Very High Economic Output from Farms
- Have Saline Soils
- Need to Deal with Saline Water Supply

Colorado River Basin SALINITY CONTROL FORUM


Colorado River
Salinity Concentrations at Numeric Criteria Sites
TDS (mg/L)
900
850
800
750
700
650
600
550
500
1940
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
below Hoover Dam
below Parker Dam
at Imperial Dam

Salinity Control Program History

- Early 1970's
  - Salinity of the Colorado River was rising
  - Significant concerns between the US and Mexico

Colorado River Basin
SALINITY
CONTROL FORUM

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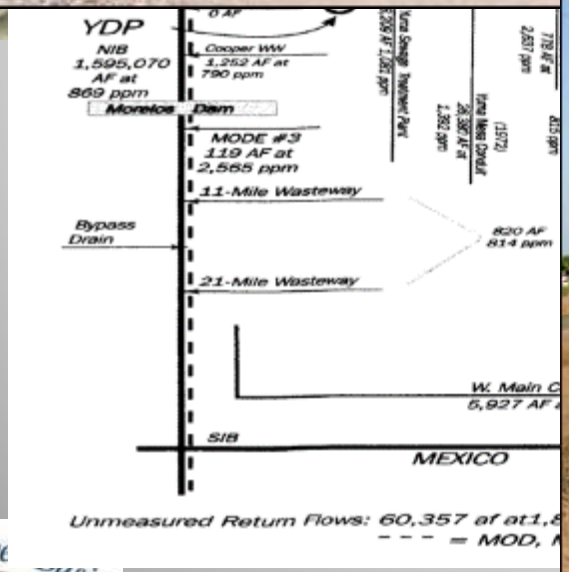

Colorado River Basin
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Salinity Control Program History

- Early 1970's
  - Salinity of the Colorado River was rising
  - Significant concerns between the US and Mexico
  - 1972 Amendments: Federal Water Pollution Control Act

Colorado River Basin Salinity Control Forum

Salinity Control Program History

- 1973 – created the Colorado River Basin Salinity Control Forum (Forum)
  - Conference on the Matter of the Pollution of the Interstate Waters of the Colorado River and its Tributaries (concluded in 1972)
- 1974 – passed the Colorado River Basin Salinity Control Act (Act)
  - Title I and Title II

Colorado River Basin
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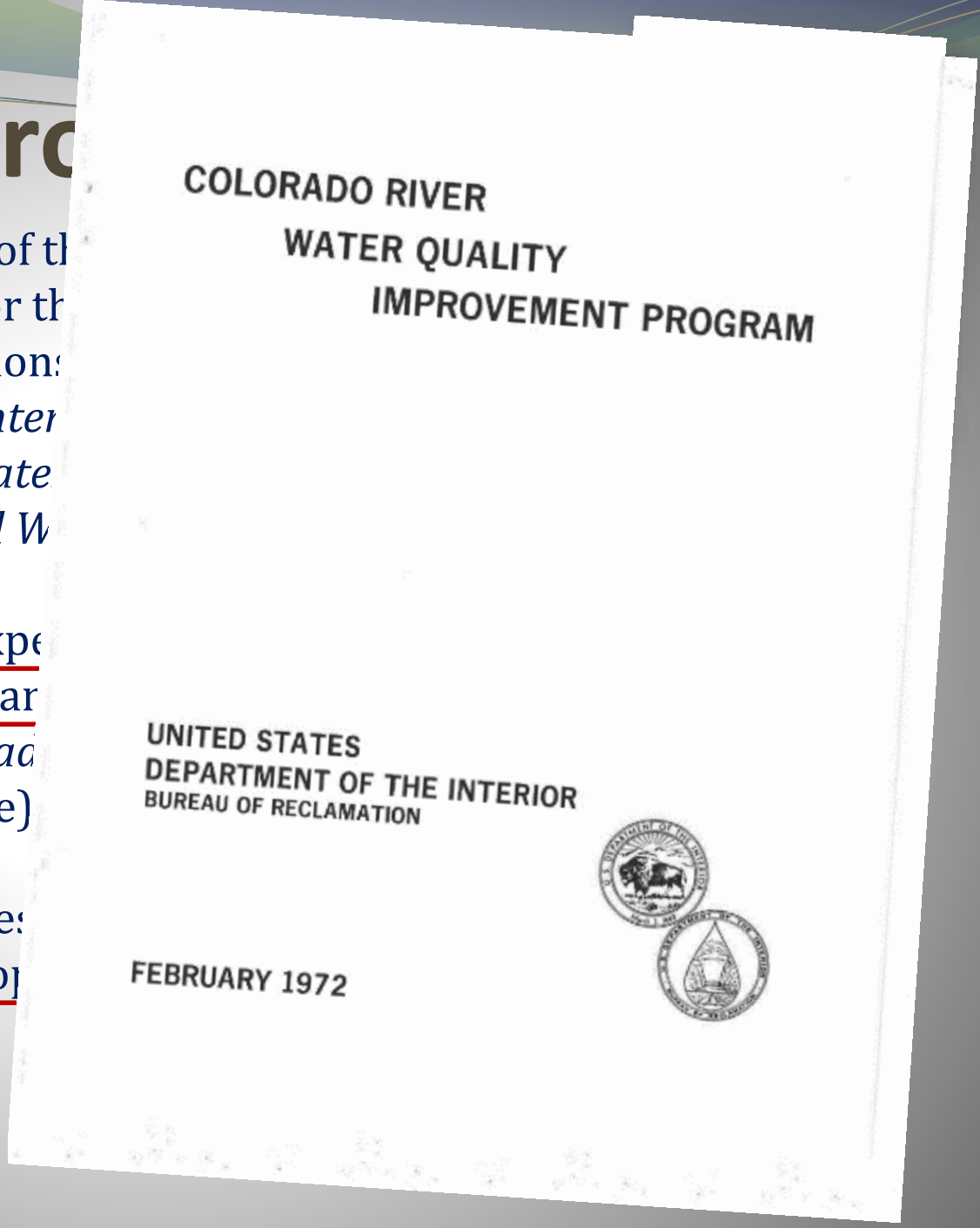
Salinity Contro

•Sec. 201: Directs the Secretary of th
salinity control policy adopted for th
"Conclusions and Recommendation
in the Matter of Pollution of the Inter
River and Its Tributaries in the State
Arizona, Nevada, New Mexico and W

•It provides that the Secretary expe
and implementation of the Prograr
Reclamation's 1972 report *Colorad*
Improvement Program (see above)

•It also directs that the Secretarie
and the Administrator of EPA coo
objectives of the Act.



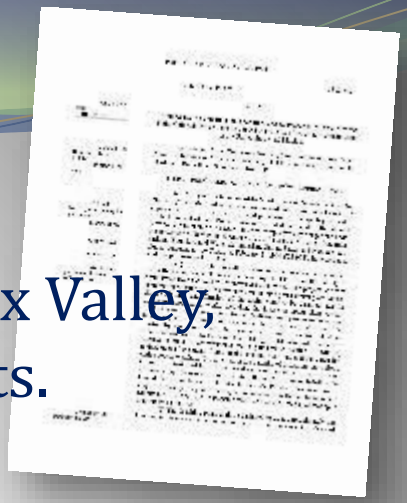
COLORADO RIVER
WATER QUALITY
IMPROVEMENT PROGRAM

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF RECLAMATION

FEBRUARY 1972

Colorado River Basin
SALINITY
CONTROL FORUM

Salinity Control Act



- Sec. 202: Authorizes the construction of the Paradox Valley, Grand Valley, Crystal Geyser and Las Vegas Wash units.

- Sec. 203: Authorizes planning reports.

- Sec. 204: Creates the Colorado River Basin Salinity Control Advisory Council.

- Sec. 205: Provides for the Program's funding, including cost share.

- Sec. 206: Directs the Secretary to every two years submit a Program progress report.

Colorado River Basin
SALINITY
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Salinity Control Progra

- 1973 – created the Colorad Salinity Control Forum (F
  - Conference on the Matter of the Interstate Waters of the Colorad Tributaries (concluded in 1972)
- 1974 – passed the Colorad Salinity Control Act (Act)
  - Title I and Title II
- 1975 – adopted salinity standards for the Colorado River

Title 40—Protection of Environment

CHAPTER I—ENVIRONMENTAL PROTECTION AGENCY

[FRL 320-5]

PART 120—WATER QUALITY STANDARDS

Colorado River System; Salinity Control Policy and Standards Procedures

The purpose of this notice is to amend 40 CFR Part 120 to set forth a salinity control policy and procedures and requirements for establishing water quality standards for salinity and a plan of implementation for salinity control in the Colorado River System which lies within the States of Arizona, California, Colorado, Nevada, New Mexico, Utah and Wyoming pursuant to section 303 of the Federal Water Pollution Control Act, as amended (33 U.S.C. 1313). A notice proposing such policy and standards procedures was issued on June 10, 1974 (39 FR 20703, 39 FR 24427).

High salinity (total dissolved solids) is recognized as a significant water quality problem causing adverse impacts on water uses. Salinity concentrations are affected by two basic processes: (a) Salt loading—the addition of mineral salts from various natural and man-made sources, and (b) salt concentration—the loss of water from the system through stream depletion.

Studies to date have demonstrated that the high salinity of stream systems can be alleviated. Although further study may be required to determine the economic and technical feasibility of controlling specific sources, sufficient information is available to develop a salinity control program.

Salinity standards for the Colorado River System would be useful in the formulation of an effective salinity control program. In developing these standards, the seven States must cooperate with one another and the Federal Government to support and implement the conclusions and recommendations adopted April 27, 1973, by the Reconvened 7th Session of the Conference in the Matter of Pollution of the Interstate Waters of the Colorado River and its Tributaries.

Public hearings on the proposed regulation were held in Las Vegas, Nevada, on August 18, 1974, and in Denver, Colorado, on August 21, 1974. Public comments were provided at the hearings and also by letter during the review period. A summary of major comments and Environmental Protection Agency response follows:

(1) The Colorado River Basin Salinity Control Forum stated that it did not object to the proposed regulation, and believed that it satisfied the requirements of section 303(b)(2) of P.L. 93-600 until October 18, 1975. The Forum reported that the seven Colorado River Basin States were actively working on the development of water quality standards and a plan of implementation for salinity control.

(2) The Colorado River Water Conservation District inquired as to whether the definition of the Colorado River Basin contained in Article II(d) of the Colorado River Compact of 1922 would be followed in the development of salinity standards and the salinity control plan.

The requirement for establishing water quality standards and an implementation plan apply to the Colorado River System as defined in Part 120.5(a) of this regulation. This definition is consistent with the definition of the Colorado River System contained in Article II(a) of the Compact. The regulation states that the salinity problem shall be treated as a basinwide problem. Articles II(f) and II(g) define the basin to include the System plus areas outside the drainage area which are served by the Colorado River System. The Environmental Protection Agency (EPA) will require that the standards and implementation plan consider the impacts of basinwide uses, e.g., transmountain diversions, on salinity effects in the System, but the establishment of standards and implementation plans pursuant to this regulation will not be required for streams located outside the System.

The District also questioned the feasibility of relying on irrigation improvement programs as a means of alleviating the salinity problem.

EPA believes that adequate information is available to initiate controls for irrigated agriculture, yet at the same time acknowledges that additional work is needed to demonstrate the efficacy of certain control measures. Projects presently being supported by EPA and others should demonstrate the adequacy of various control measures including management and non-structural techniques. These measures will be considered during the development of the implementation plan.

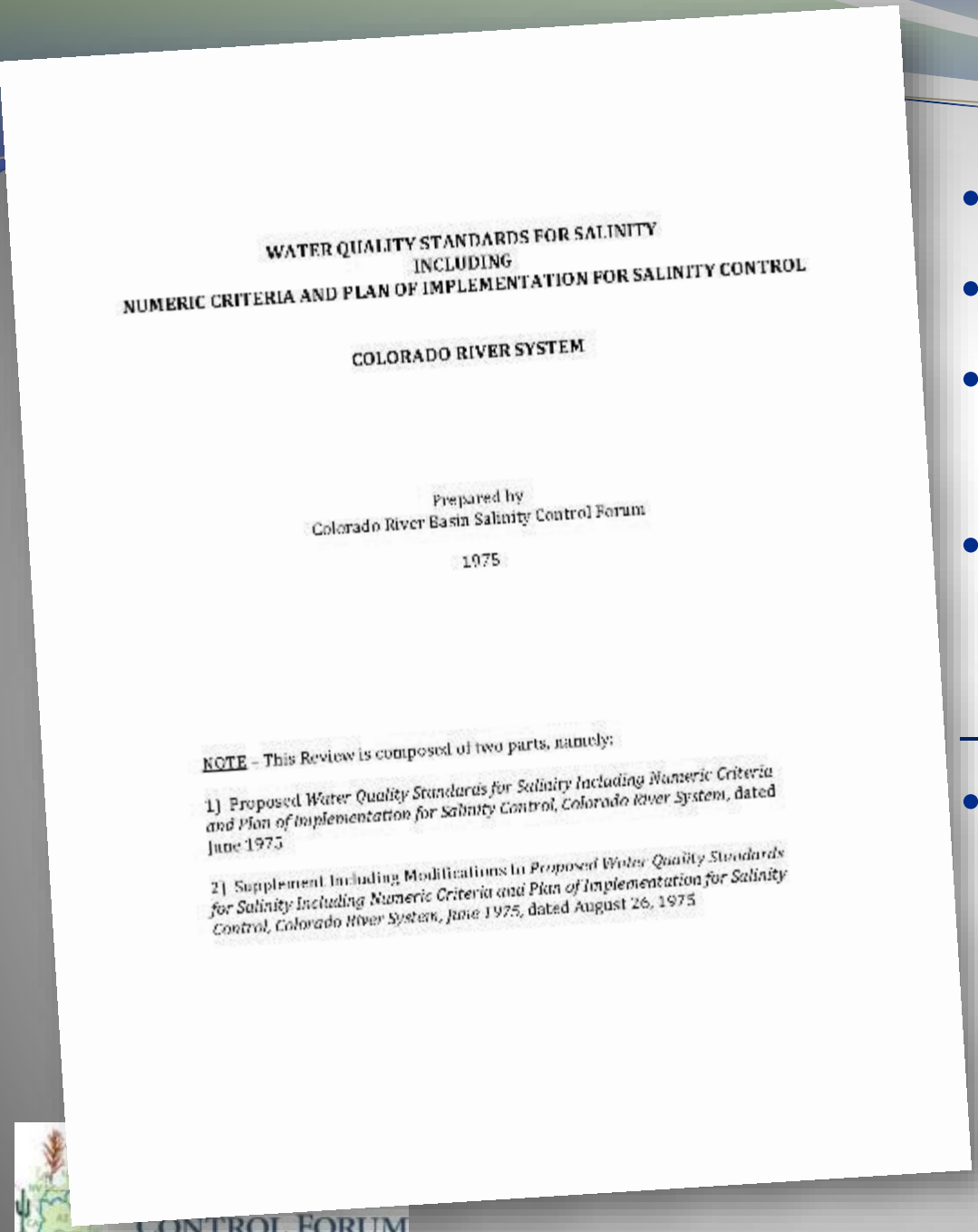
(3) The Environmental Defense Fund (EDF) testified that it believed that EPA was not complying with the requirements of the Federal Water Pollution Control Act, as amended, chiefly because of EPA's late response to the timetable delineated in the Act for establishing standards, and also because numerical standards still have not been set for the Colorado River System. EDF called upon EPA to withdraw the proposed regulation and promptly promulgate numerical limits for salinity.

EPA believes that a move to promulgate numerical standards at this time could cause even further delays in controlling salinity due to the problems involved with obtaining interstate cooperation and public acceptance of such a promulgation.

(4) The Sierra Club raised a number of objections to the proposed regulation, principally because, in its opinion, it permits further development of the waters of the Colorado River without requiring that adequate salinity controls be on line prior to development. Specific suggestions are:

(a) Section 120.5(e)(3). Shorten the deadline for submission of the standards and implementation plan to May 30, 1975.

Colorado River Basin SALINITY CONTROL FORUM



WATER QUALITY STANDARDS FOR SALINITY
INCLUDING
NUMERIC CRITERIA AND PLAN OF IMPLEMENTATION FOR SALINITY CONTROL

COLORADO RIVER SYSTEM

Prepared by
Colorado River Basin Salinity Control Forum

1975

NOTE – This Review is composed of two parts, namely:

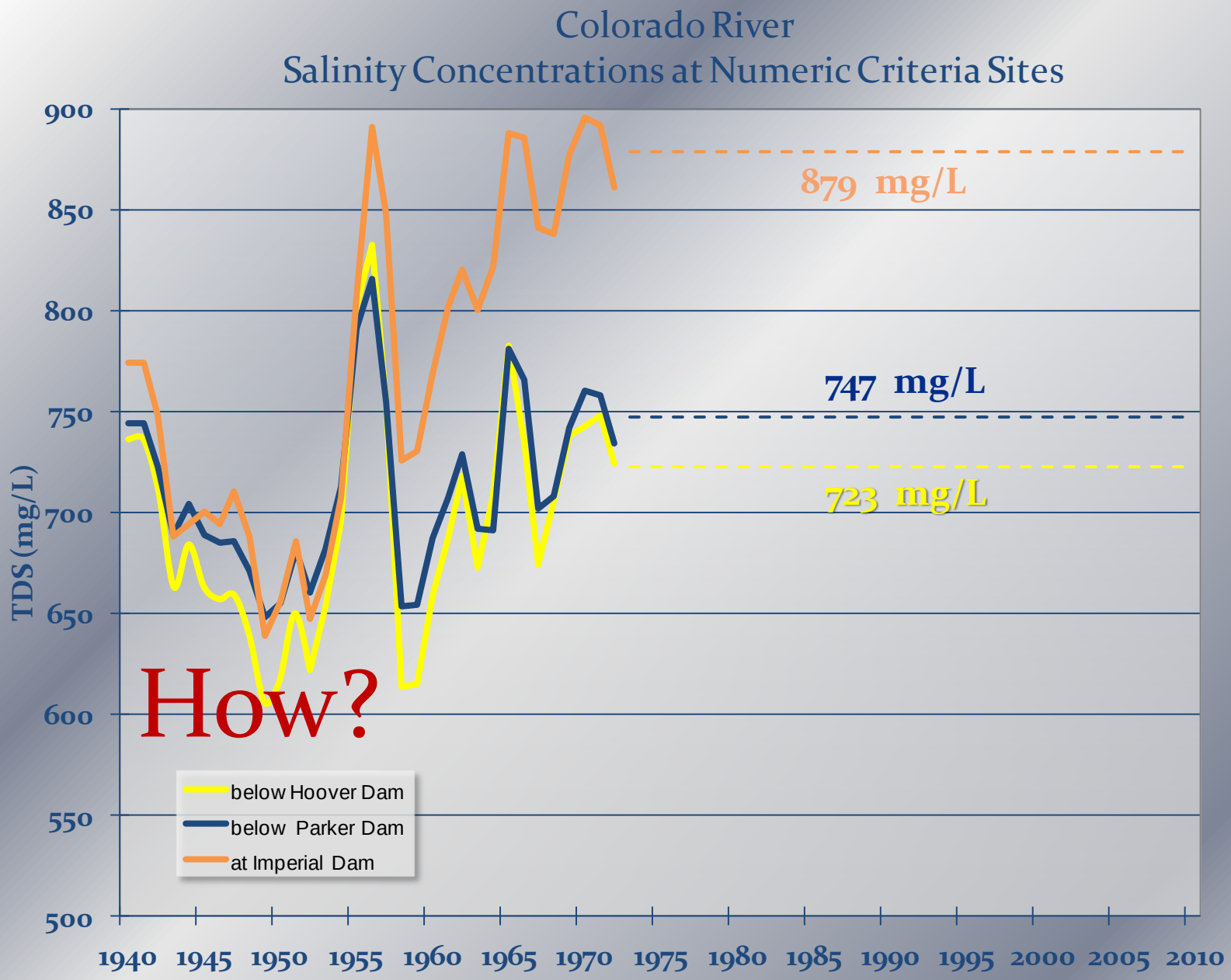
1) Proposed *Water Quality Standards for Salinity Including Numeric Criteria and Plan of Implementation for Salinity Control, Colorado River System*, dated June 1975

2) Supplement Including Modifications to *Proposed Water Quality Standards for Salinity Including Numeric Criteria and Plan of Implementation for Salinity Control, Colorado River System, June 1975*, dated August 26, 1975

- Proposed in June, 1975
- Public comment
- Revised and adopted August 26, 1975
- Approved by EPA/ challenged by EDF

- Requires update or "review" every 3 years

CONTROL FORUM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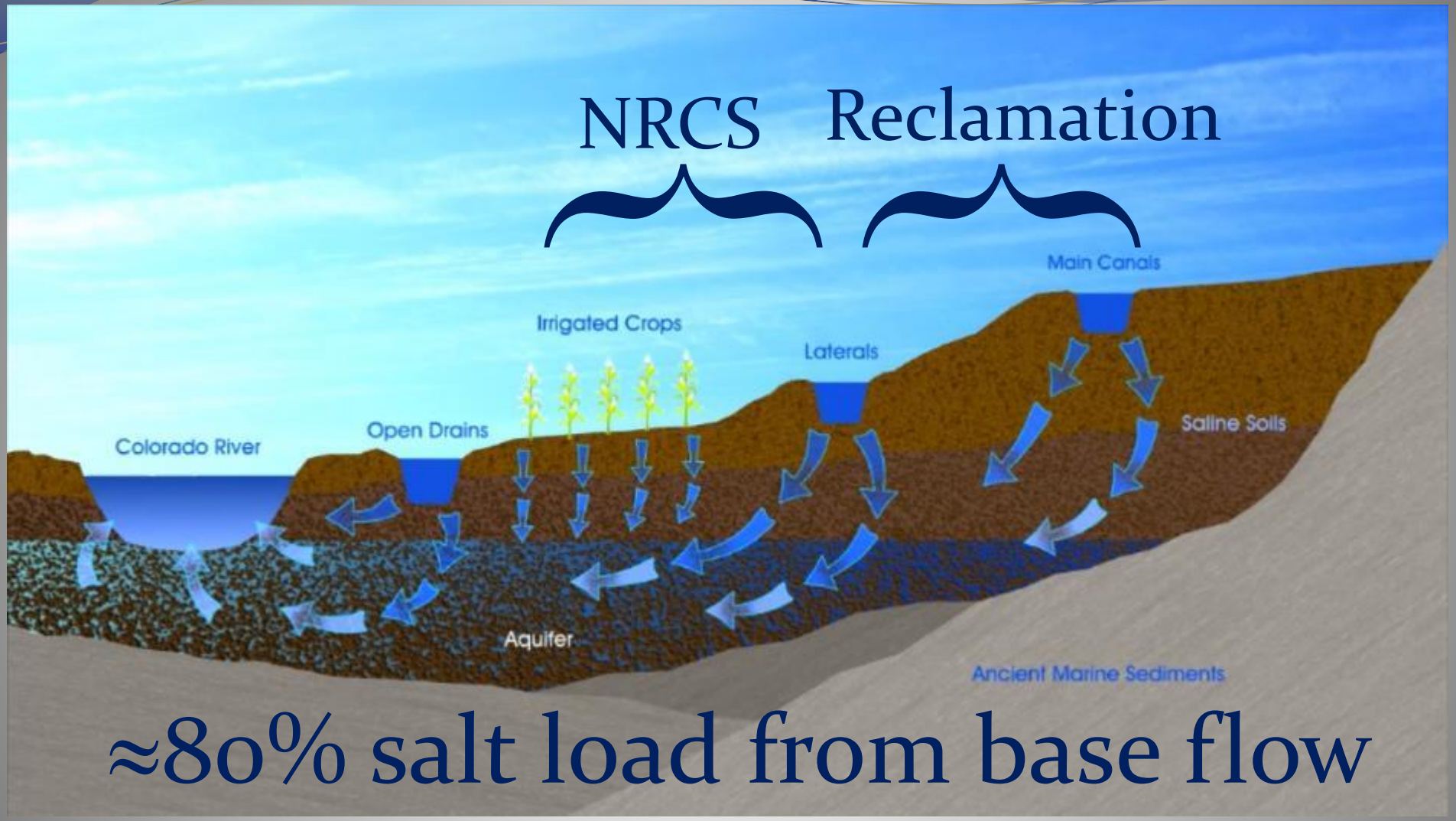
1945
1950
1955
1960
1965
1970
1975
1980
1985
1990
1995
2000
2005
2010
879 mg/L
747 mg/L
723 mg/L
How?
below Hoover Dam
below Parker Dam
at Imperial Dam



≈80% salt load from base flow

Colorado River Basin
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Salini

- Non-P
  - Lini

- **Basinwide Program**
- **FOA**
- **$9M Appropriation**
- **$3.9M Cost Share**

Colorado River Basin
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- EQIP
- Applications by Producers
- $12M Appropriation
- $5.2M Cost Share

Colorado River Basin
SALINITY
CONTROL FORUM

- BLM
- Aquatic Habitat Management Program (Soil Water and Air Program)
- $2M Appropriation
- $0M Cost Share

SALINITY CONTROL FORUM

Salinity Control Program

- Non-Point Source Activities
  - Lining and piping of canals and ditch
  - On-farm irrigation efficiency improve
  - Rangeland improvements (BLM)
- Point Source Activities
  - State NPDES administration pursuant to Forum's policies (7 States and EPA)

POLICY FOR IMPLEMENTATION OF
COLORADO RIVER SALINITY STANDARDS
THROUGH THE NPDES PERMIT PROGRAM

Adopted by
The Colorado River Basin Salinity Control Forum

February 23, 1977
Revised October 30, 2002

In November 1976, the United States Environmental Protection Agency Regional Administrator notified each of the seven Colorado River Basin states of his approval of the water quality standards for salinity for the Colorado River System as contained in the document entitled "Proposed Water Quality Standards for Salinity Including Numeric Criteria and Plan of Implementation for Salinity Control, Colorado River System, June 1975, and the supplement dated August 25, 1975. The salinity standards including numeric criteria and a plan of implementation provide for a flow weighted average annual numeric criteria for four stations in the lower main stem of the Colorado River, below Hoover Dam, below Parker Dam, and at Imperial Dam.

In 1977, the states of the Colorado River Basin adopted the "Policy for Implementation of Colorado River Salinity Standards through the NPDES Permit Program." The plan of implementation is comprised of a number of federal and non-federal projects and measures to maintain the flow weighted average annual salinity in the Lower Colorado River at or below numeric criteria at the three stations in the Upper and Lower Basin states continue or develop that comprise approximately [illegible]. One of the components of the Plan consists of the placing of effluent limitations, through the National Pollutant Discharge Elimination System (NPDES) permit program, on industrial and municipal discharges.

NPDES Policy for Municipal and Industrial Discharges of Salinity in the Colorado River

The purpose of this policy is to provide more detailed guidance in the application of salinity standards developed pursuant to Section 303 and through the NPDES permitting salinity in the regulation of municipal and industrial sources. (See Section 402 of the Federal Water Pollution Control Act.) The objective of the policy, as provided in Sections I.A. and I.B., is to achieve "no net increase" wherever practicable in salinity of discharges and no measurable increase in salinity over the supply water for municipal discharges. This policy is applicable to discharges that would have an impact, either direct or indirect on the lower main stem of the Colorado River System. The lower main stem is defined as that portion of the River from Hoover Dam to Imperial Dam.

In October, 2002, the Forum substantially amended the NPDES policies relating to industrial discharges but made no changes to the procedures for municipal discharges. In the process of the 2002 Revision, however, the section relating to municipal discharges and an additional appendix entitled "Guidance on New Construction Determination" were inadvertently omitted.

B-1

Colorado River Basin
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Salinity Control Program Efforts

- Non-Point Source Activities
  - Lining and piping of canals and ditches (Reclamation)
  - On-farm irrigation efficiency improvements (NRCS)
  - Rangeland improvements (BLM)
- Point Source Activities
  - State NPDES administration pursuant to Forum's policies (7 States and EPA)
  - Plugging of saline wells (BLM)
  - Saline spring disposal (Paradox Valley Unit, Reclamation)

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Paradox Valley Unit (PVU)

Colorado River Basin
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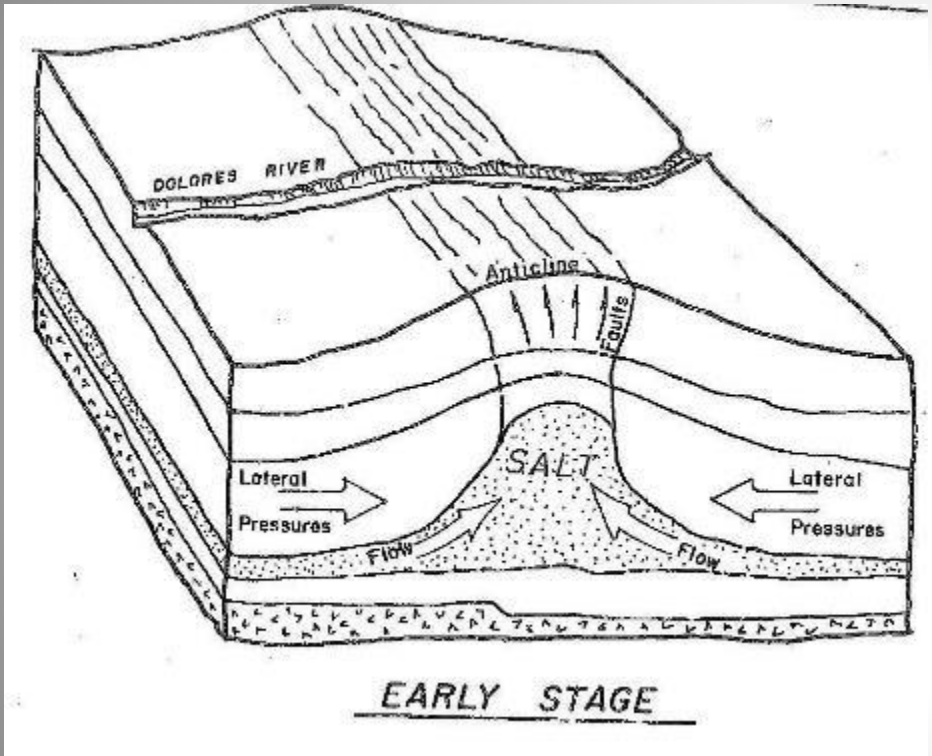
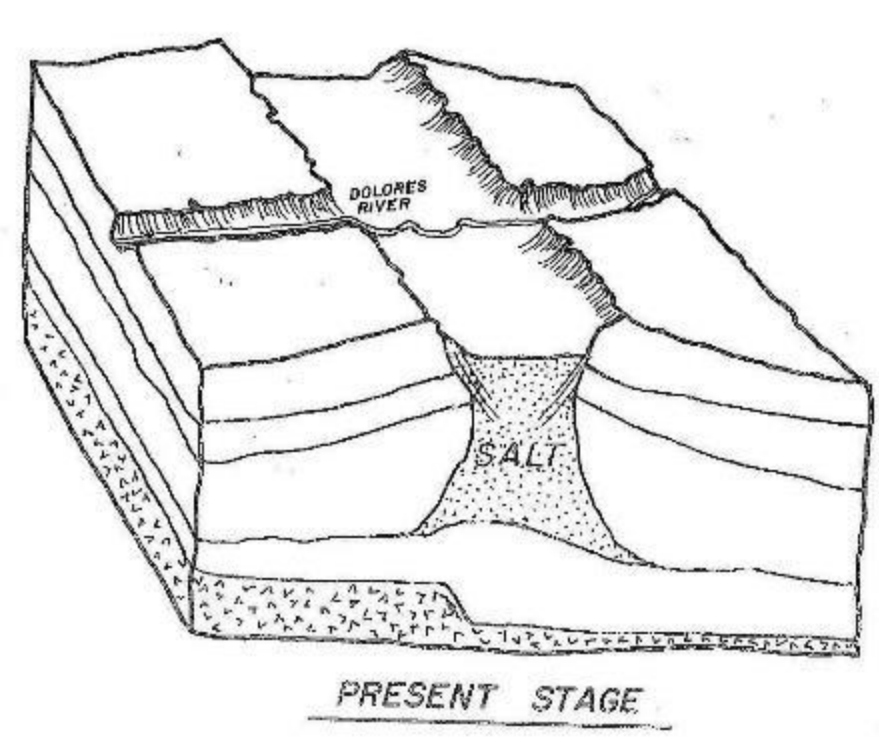
Paradox Valley





Colorado River Basin
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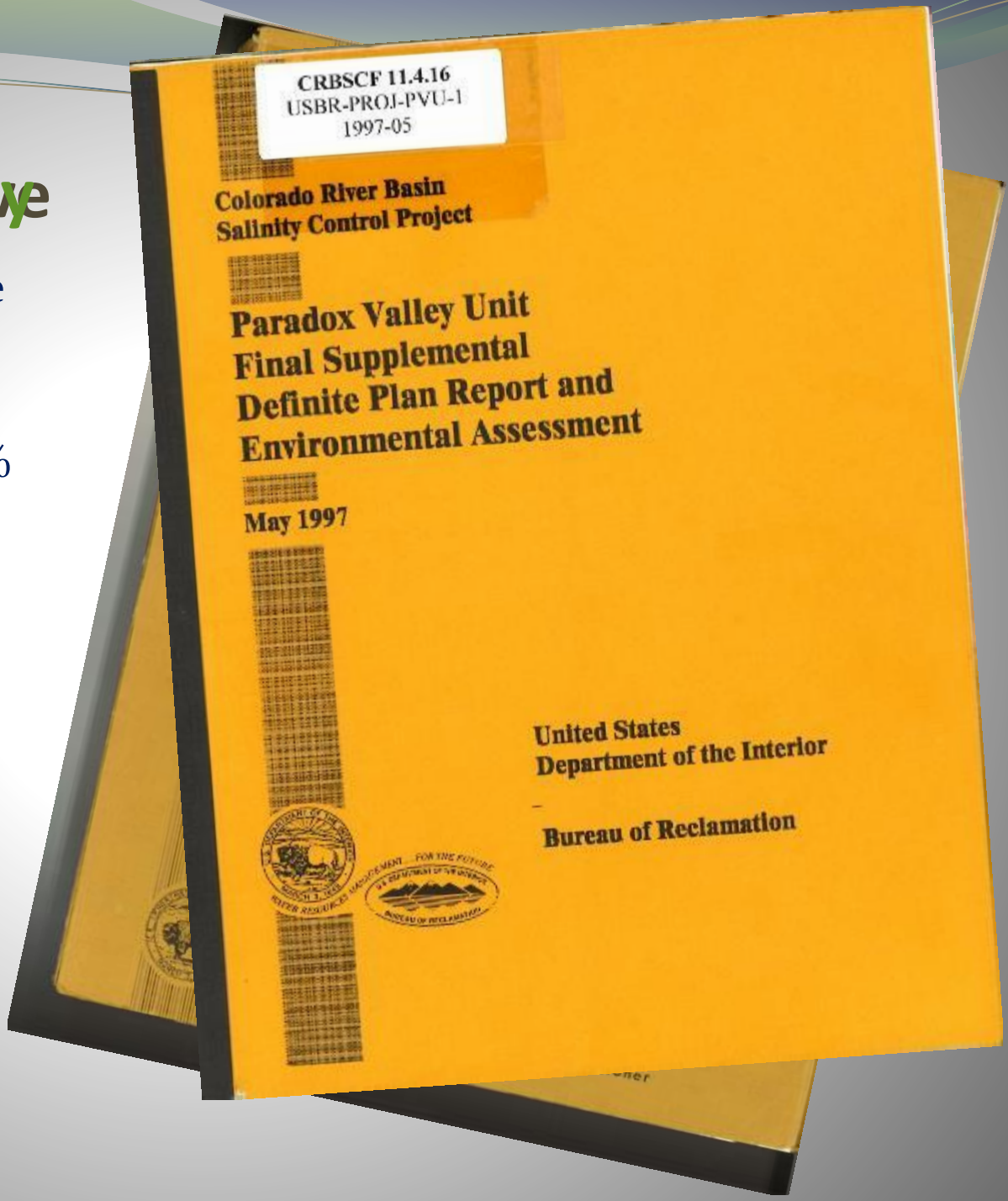
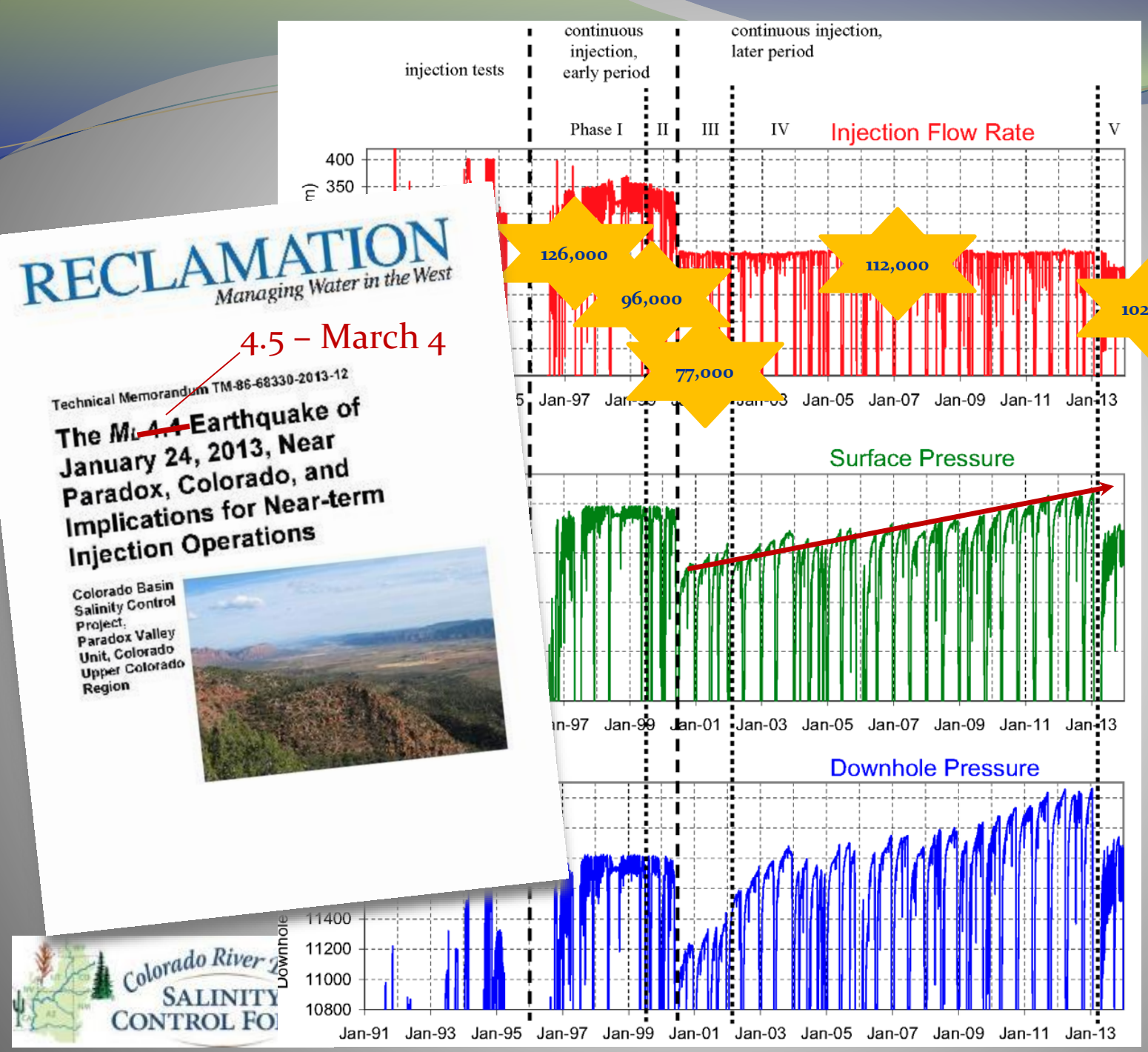
Permanent Facility

- Capture up to 5 cfs of brine
- Dispose of brine in a 3,636 af evaporation pond
- Reduce salt loading by 64% or 180,000 tons per year
- Reduced downstream concentrations by 18 mg/L



Colorado River Basin SALINITY CONTROL FORUM

Paradox Valley Unit (PVU)


injection tests
continuous injection, early period
continuous injection, later period
Phase I
II
III
IV
V
Injection Flow Rate
400
350
126,000
96,000
77,000
112,000
102,000
Jan-97
Jan-05
Jan-07
Jan-09
Jan-11
Jan-13
Surface Pressure
Jan-01
Jan-03
Downhole Pressure
11400
11200
11000
10800
Jan-91
Jan-93
Jan-95
RECLAMATION
Managing Water in the West
4.5 – March 4
Technical Memorandum TM-86-68330-2013-12
The M~~L 4.4~~ Earthquake of January 24, 2013, Near Paradox, Colorado, and Implications for Near-term Injection Operations
Colorado Basin Salinity Control Project, Paradox Valley Unit, Colorado
Upper Colorado Region
Colorado River
SALINITY
CONTROL FO

Paradox Valley Unit (PVU) EIS

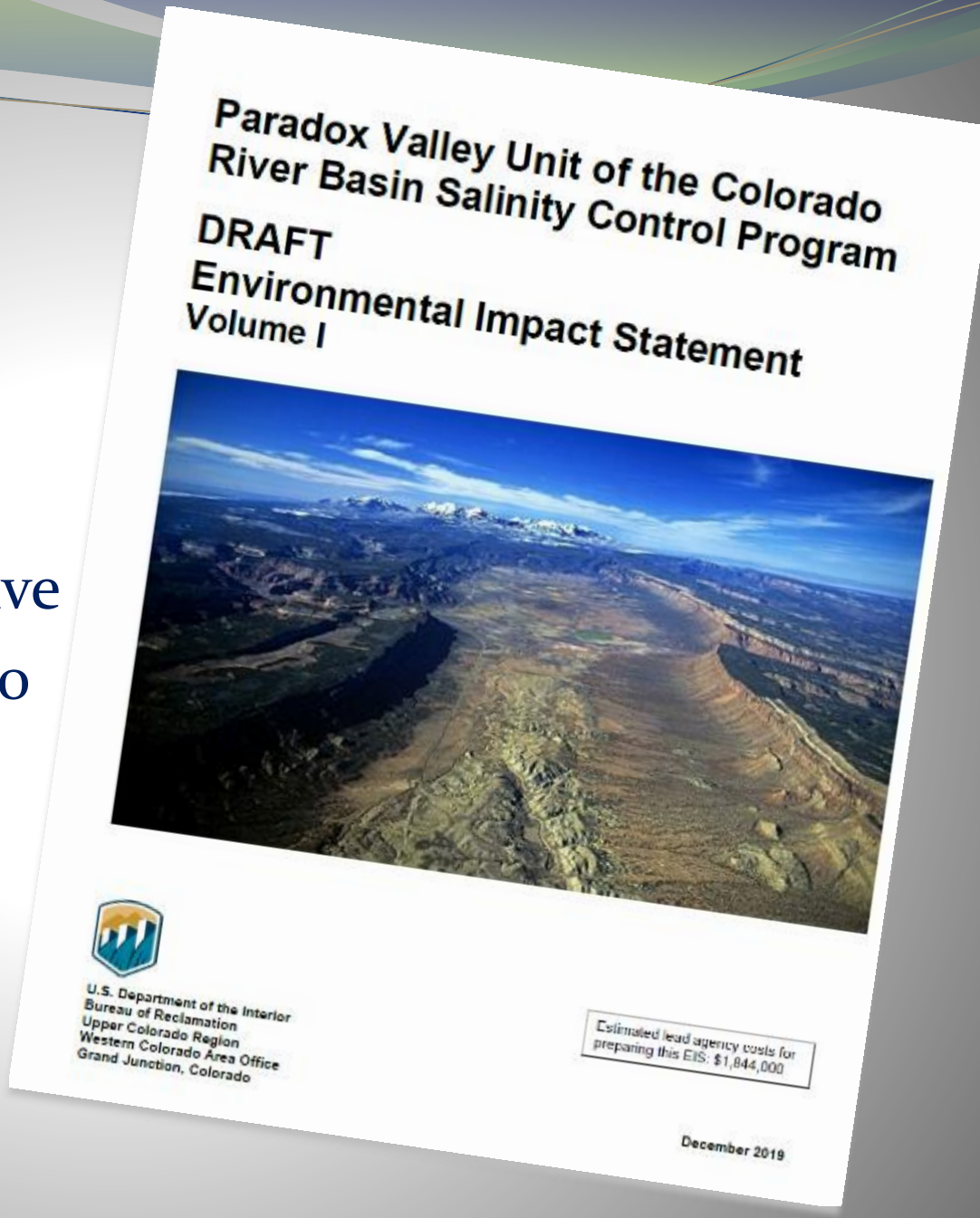
Zero Liquid Discharge (ZLD)

Colorado River Basin Salinity Control Forum

PVU DEIS

- 4 Volumes
- 180 pages, 1300 pages
- No Preferred Alternative
- Comments: Feb 4, 2020
- Draft Final: April
- Record of Decision:

  August 2020


Paradox Valley Unit of the Colorado River Basin Salinity Control Program

DRAFT

Environmental Impact Statement

Volume I

U.S. Department of the Interior
Bureau of Reclamation
Upper Colorado Region
Western Colorado Area Office
Grand Junction, Colorado

Estimated lead agency costs for preparing this EIS: $1,844,000

December 2019

Colorado River Basin SALINITY CONTROL FORUM

Comparison of Alternatives

Alternative	No Action	Injection Well	Evap Pond	Brine Crystal
Salt reduction (tons/year)	0	114,000	171,000	171,000
Impact to salinity at Imperial (mg/L)	9.2 ↑	11.1 ↓	16.7 ↓	16.7 ↓
Reduced downstream damages ($)	$23M ↑	$28M ↓	$42M ↓	$42M ↓
Construction Costs	$3.7M	$108M	$132M	$112M
Annual OM&R Costs	na	$3.0M	$5.7M	$11.8M
Amortized $/ton	na	$62	$63	$94

SALINITY CONTROL FORUM

Range of Projects in 2019 FOA: $50 -$69, $59

How is the Program Funded? $

- Act provides that because "most" of the salt comes from federally administered lands:
  - 70% paid by federal government (Reclamation and NRCS)
  - 30% paid as cost-share by basin states through the Basin Funds (generated from a mill levy on power sales)
    - ≅ $12M annually
      - Upper Basin Fund – 15%
      - Lower Basin Fund – 85%
  - BLM funding is separate
  - Program participants also cost-share in their projects

Colorado River Basin Salinity Control Forum

How is the Program Funded? $

- Reclamation's Basinwide Program
  - Line item in President's Budget ($8M - $10M)
- NRCS EQIP expenditures
  - State Conservationists' Three-Year Funding Plan
  - Managers discretion ($12M)
  - About 1% of total EQIP
- BLM
  - Aquatic Habitat Management Program
  - Congressionally directed spending ($2M)

Colorado River Basin SALINITY CONTROL FORUM

Salinity Damages – Upper Basin

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Salinity Damages

- Increased salinity causes significant economic damage to M&I water delivery infrastructure
- Degrades plumbing and appliances in homes
- Increases costs for recycling and wastewater treatment
- Reduces agricultural crop productivity and increases water use for soil leaching purposes

Colorado River Basin Salinity Control Forum

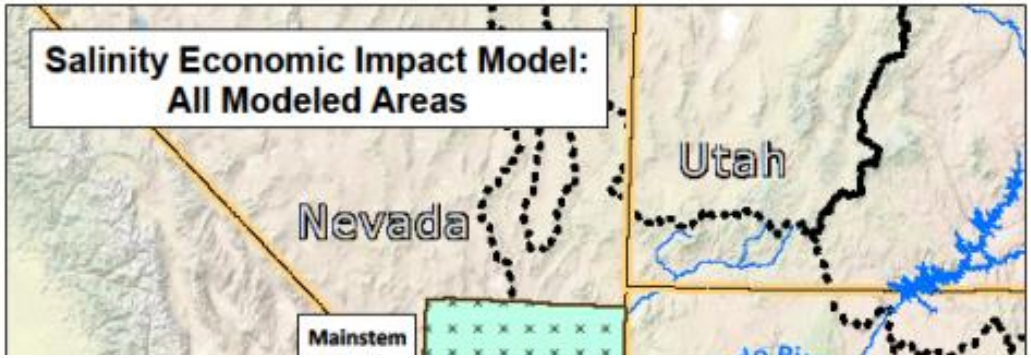
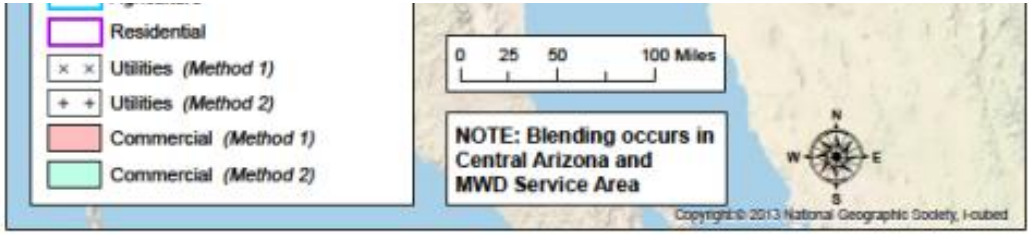


Table 3
Economic Sector Impact Category Items Included in the SEIM

Economic Sector	Impact Category Items
Residential	Water Pipes, Water Heater, Faucet, Garbage Disposal, Clothes Washer, Dishwasher, Water Softener, Detergent
Commercial	Sanitary, Cooling, Irrigation, Kitchen, Laundry, Misc.
Industrial	Process Water, Cooling Tower, Boiler, Sanitation, Irrigation
Water Utilities	Treatment Plant, Distribution System
Groundwater	Direct Recharge, Indirect Recharge, Incidental Recharge
Recycled Water & POTW	Irrigation, Direct Groundwater Recharge, Indirect Groundwater Recharge
Agriculture	**MWD Subareas Crops:** Strawberry, Nursery, Cut Flowers, Misc. Vegetable, Citrus, Avocado, Vineyard, Pasture/grain, Deciduous, Field Crops **All Other Subareas Crops:** Head Lettuce, Leaf Lettuce, Romaine Lettuce, Broccoli, Cauliflower, Alfalfa Hay, Onions, Avocados, Cantaloupe, Carrots, Oranges, Tangerines, Lemon/Limes, Grapefruit, Table Grapes, Potatoes, Corn, Wheat, Cotton, Barley, Olives, Honeydews, Tomatoes, Leaching Management Costs



Colorado River Basin SALINITY CONTROL FORUM

AGRICULTURAL WORKSHEET

PART I - TDS FUNCTIONS:

RESIDENTIAL WORKSHEET

PART I - TDS FUNCTION AND UNIT COST PER HOUSEHOLD:

Table covers MWD and Lower Colorado subareas.

TDS functions are taken from Lohman et al, 1988 with updates from MWD and Reclamation 1999, and CASS 2003.

Consumer Price Index (CPI) Used for Indexing Residential Costs

Same Appliance Cost Assumed for All Areas - Feb, 2017

	MWD & nonMWD subareas		Mainstem AZ subareas		Clark County / Central AZ		
ITEM	Unit Cost ($)	% of Houses	Unit Cost ($)	% of Houses	Unit Cost ($)	% of Houses	TDS FUNCTION FORMULA (y = useful life, x = TDS)
galvanized water pipe	$3,923	0.13	$ 3,923	0.00	$ 3,923	0.00	$y = 12 + e^{(3.4 - 0.0018x)}$
water heaters	$453	1.00	$ 453	1.00	$ 453	1.00	$y = 14.63 - 0.013x + 0.689(10^{-5})x^2 - 0.11(10^{-8})x^3$
faucets	$667	1.00	$ 667	1.00	$ 667	1.00	$y = 11.55 - 0.00305x$
garbage disposals	$181	0.75	$ 181	0.43	$ 181	0.93	$y = 9.23 - 0.00387x + 1.13(10^{-6})x^2$
clothes washers	$641	0.67	$ 641	0.95	$ 641	0.99	$y = 14.42 - 0.0114x + 0.46(10^{-5})x^2$
dishwashers	$679	0.51	$ 679	0.60	$ 679	0.96	$y = 14.42 - 0.0114x + 0.46(10^{-5})x^2$
bottled water	$90	-	$ 90	-	$ 90	-	$y = 61.1 + 0.00323x$ (y = % of households using bottled water)
water softeners	$489	-	$ 489	-	$ 489	0.48	$y = 6.758 + 0.007x + 3.01(10^{-6})x^2 + 2.2(10^{-10})x^3$ (y = % of households using water softeners)
water treatment devices	#N/A	-	#N/A	-	#N/A	0.27	Combined with bottled water
evaporative coolers	$550	0.00	$ 550	0.43	$ 550	0.09	$y = 20/e^{(.0001761*x)}$
soaps and detergents (cleaning products)	$176	1.00	$ 176	1.00	$ 176	1.00	y = (Cell B16)*(1+ 0.000025x) (y = annual cost per household)

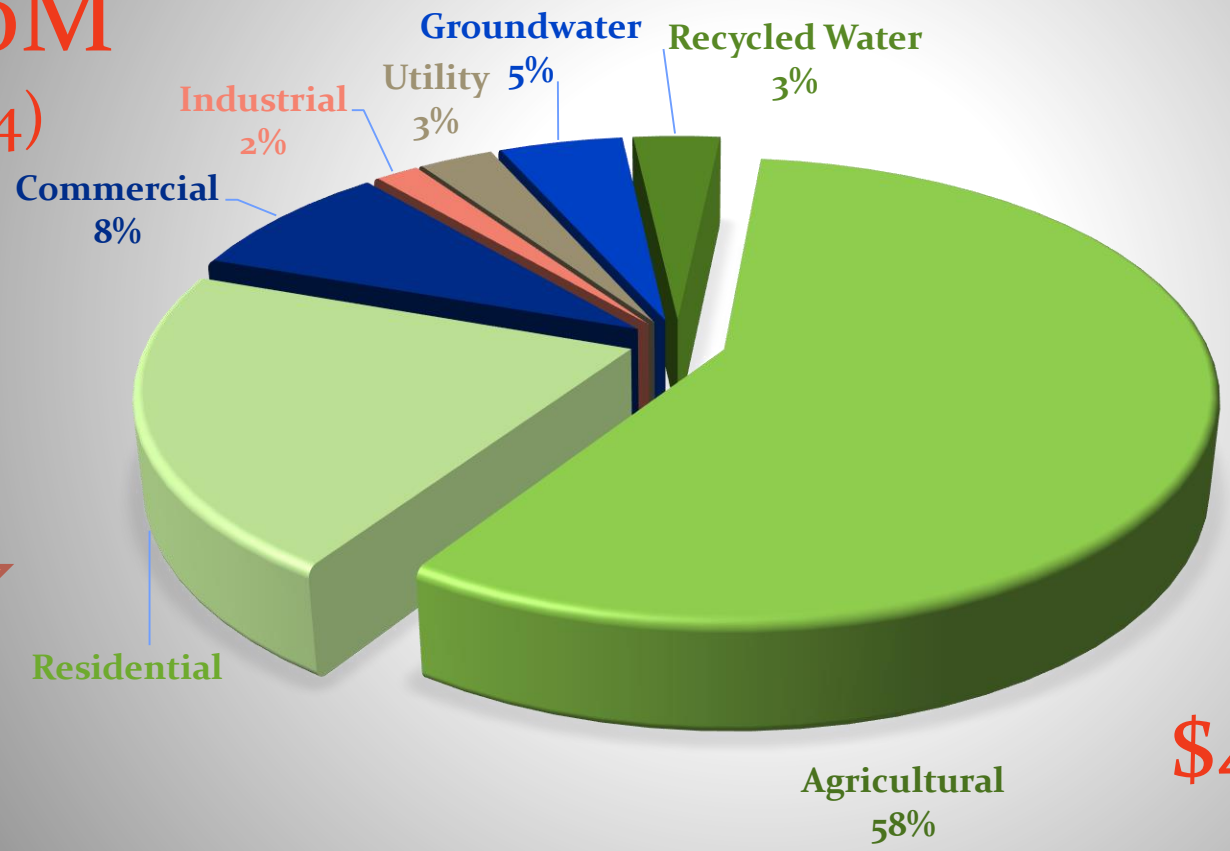
PART II - CALCULATIONS:

		USEFUL LIFE, ADDITIONAL COST									
MWD subareas	TDS	Useful Life of Water Pipes (Year)	Useful Life of Water Heaters (Year)	Useful Life of Faucets (Year)	Useful Life of Garbage Grinders (Year)	Useful Life of Clothes Washers (Year)	Useful Life of Dish Washers (Year)	Percent of Households using Bottled Water (%)	Percent of Houses with Water Softeners (%)	Useful Life of Evpaorative Coolers (Year)	Annual household Additional Cost of Cleaning Products ($)
Northwest Area	368	27.45	10.72	10.43	7.96	10.85	10.85	62.29	9.75	18.74	177.62
Los Angeles Area	322	28.78	11.12	10.57	8.10	11.22	11.22	62.14	9.33	18.90	177.42
West Basin Area	503	24.11	9.69	10.01	7.57	9.85	9.85	62.73	11.07	18.30	178.21
Central Basin Area	452	25.28	10.06	10.17	7.71	10.21	10.21	62.56	10.56	18.47	177.99
San Gabriel Area	357	27.75	10.81	10.46	7.99	10.93	10.93	62.25	9.65	18.78	177.57
Chino Basin Area	293	29.68	11.39	10.66	8.19	11.48	11.48	62.05	9.07	18.99	177.29
Orange County Area	520	23.75	9.58	9.96	7.52	9.73	9.73	62.78	11.25	18.25	178.29
Western Riverside Area	421	26.05	10.30	10.27	7.80	10.44	10.44	62.46	10.25	18.57	177.85
San Diego Area	510	23.97	9.65	9.99	7.55	9.80	9.80	62.75	11.14	18.28	178.24
Eastern Riverside Area	400	26.57	10.46	10.33	7.86	10.59	10.59	62.39	10.06	18.64	177.76

Lower Colorado subareas	
Barley (lbs/acre)	if x<=2560,y=7000; if 2560<x, y=7000-(1.092*(x-2560))
Olives(lbs/acre)	if x<= 864,y=12,000; if 864<x, y= 12000 -(3.3*(x-864))
Honeydews (cwt/acre)	if x<=352, y=200; if x>352, y=200-(0.051*(x-352))
Tomatoes (tons/acre)	if x<=640,y=36; if 640<x<=900, y=36-(0.11*(x-640);if 900<x<=1200,y=33.14-(.0064*(x-900))

Quantified Salinity Damages by Sector

$300M
(2014)



$454M
(2017)

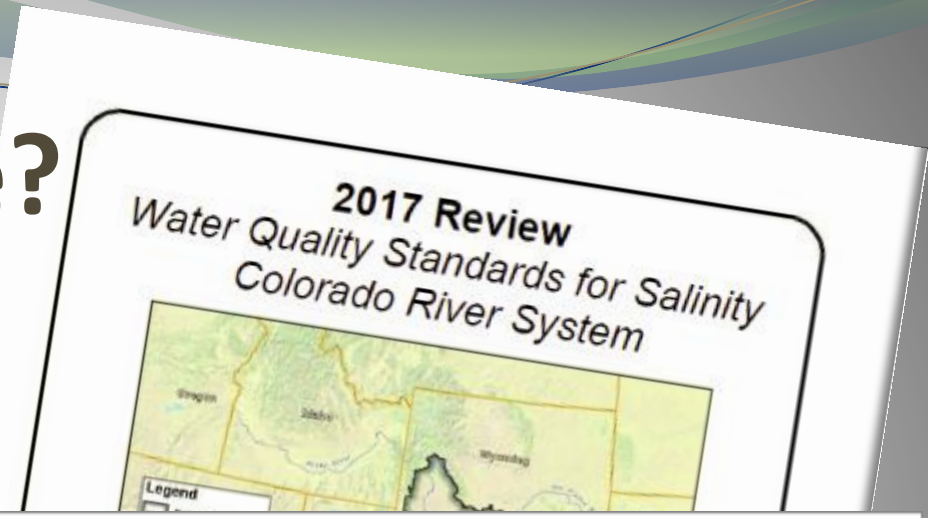
$574M
(2035)

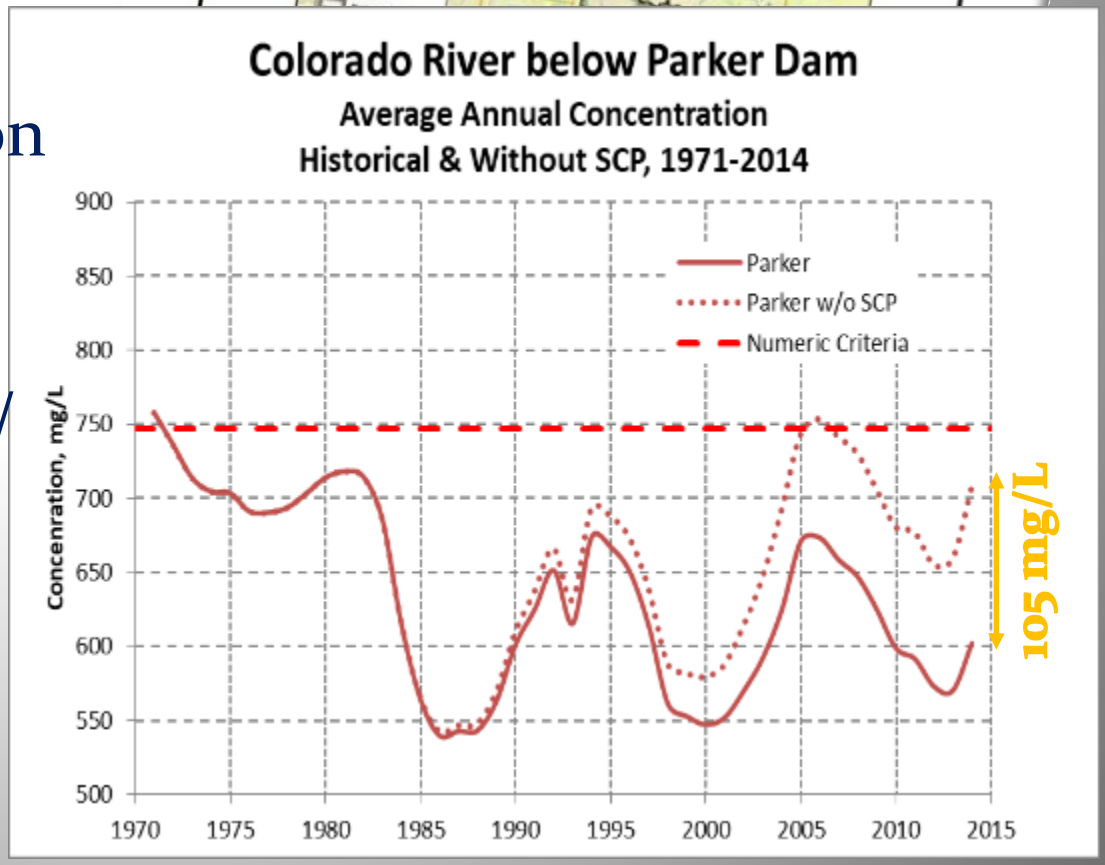
Annually!

Colorado River Basin
SALINITY
CONTROL FORUM

How Have We done?

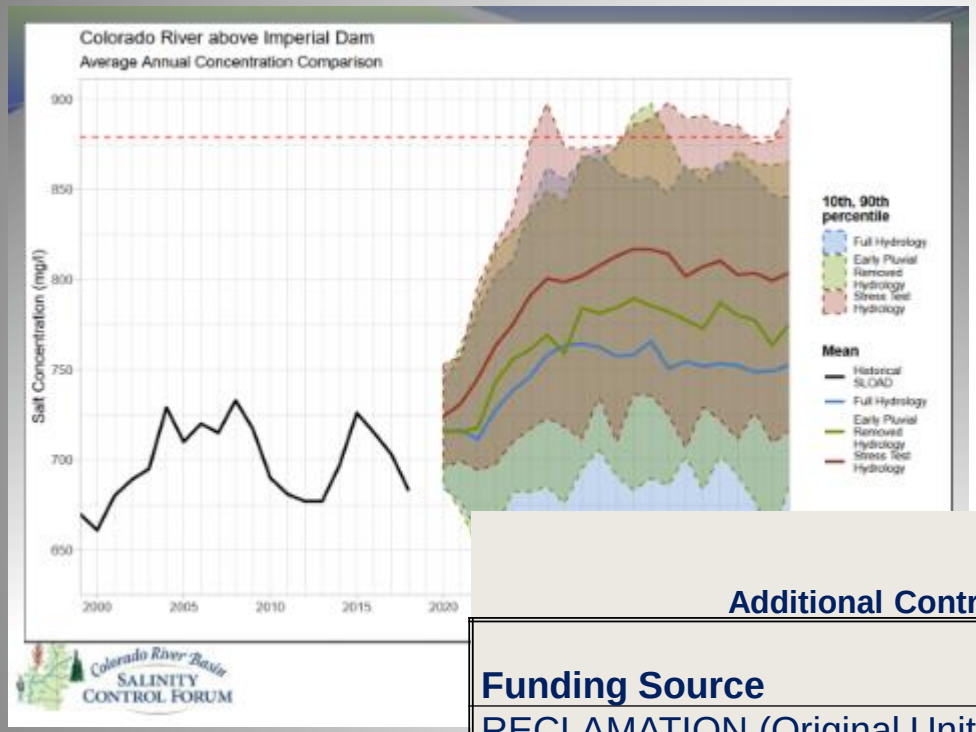
- Findings:
  - 1.33 million of control
  - 100+ mg/L better
- Plan of Implementation
  - 63,500 tons (3 years)
  - 332,000 tons (2035)
- Adopted by each state/ approved by EPA





Colorado River Basin Salinity Control Forum

2020 Review



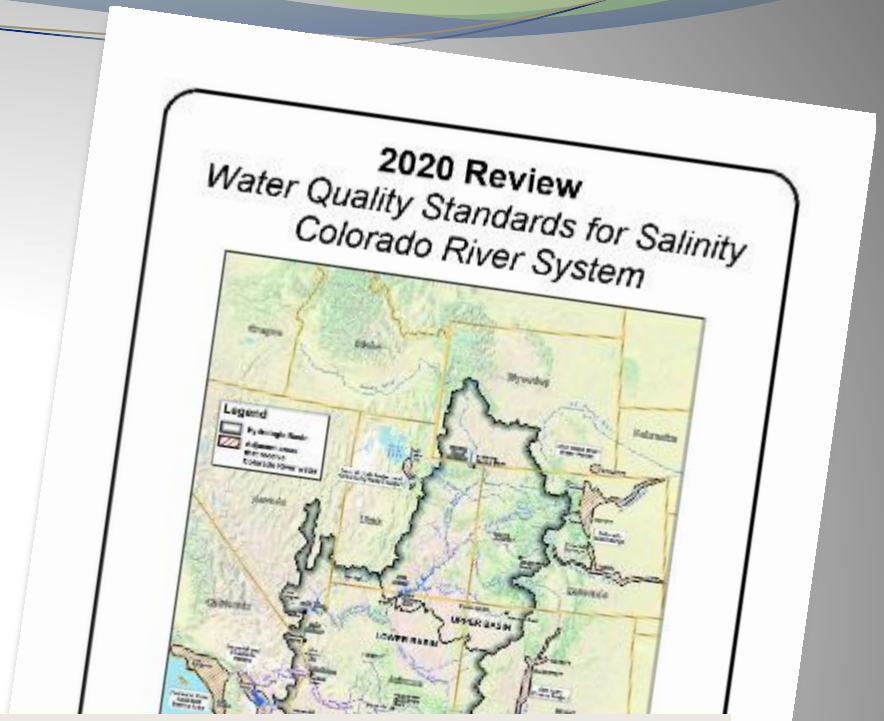


Table 2

Additional Controls-Plan of Implementation 2023

Funding Source	Tons/Year as of 2023
RECLAMATION (Original Units)	0
RECLAMATION (Basinwide Program)*	27,800
BASIN STATES PROGRAM (BSP)	4,500
USDA NRCS (EQIP)	30,100
TOTAL	**62,400**

*Includes cost-share dollars from Basin States Program

*BLM Nonpoint Source controls not included

Colorado River Basin Salinity Control Forum

Program Coordina

Governors

Colorado River Basin Salinity Control Advisory Council

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Colorado River Basin
SALINITY
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News and Announcements

At its meeting on October 24, 2017, the Forum adopted its *2017 Review, Water Quality Standards for Salinity, Colorado River System*. The salinity standards outlined in this triennial review will now be incorporated into the seven Colorado River Basin States' respective water-quality standards.

The Forum has released a Program Video and Trailer which provide an overview of the Colorado River Basin Salinity Control Program.

Welcome to the Colorado River Basin Salinity Control Forum Website

Recognizing the rapidly increasing salinity concentration in the Lower Colorado River and its impact on water users, the Colorado River Basin States came together in 1973 and organized the Colorado River Basin Salinity Control Forum (Forum). In 1974, in coordination with the Department of the Interior and the U.S. State Department, the Forum worked with Congress in the passage of the Colorado River Basin Salinity Control Act (Act). Title I of the Act deals with the United States' salinity commitments to Mexico. Title II of the Act creates the Colorado River Basin Salinity Control Program (Program) which focuses on improving the water quality of the Colorado River to U.S. users above Imperial Dam.

Since implementation of the Program, measures have been put in place which now reduce the annual salt load of the Colorado River by more than 1.3 million tons. The salinity concentration at Hoover, Parker and Imperial Dams has been reduced by more than 100 mg/L. However, even with these efforts the *quantified* damages to U.S. users are still approximately $454 million per year. Damages are projected to increase to $574 million per year by 2035 if the Program does not continue to be aggressively implemented.

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Colorado River Basin SALINITY CONTROL FORUM

Questions?