



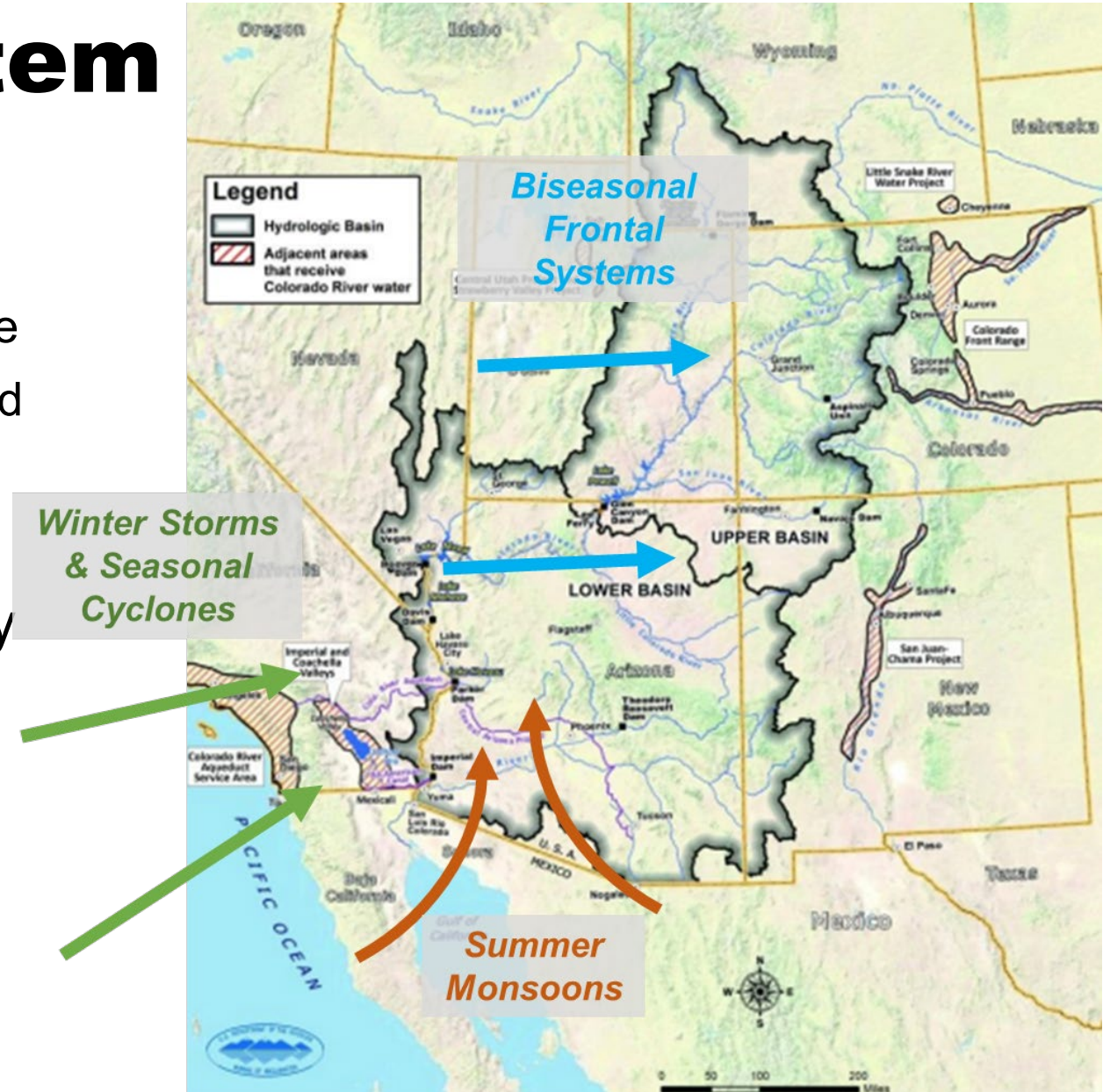
Salinity in the Colorado River Basin

Terry Goddard
CAWCD Board President

Joshua Randall, PhD
Water Planning Analyst, Colorado River Programs

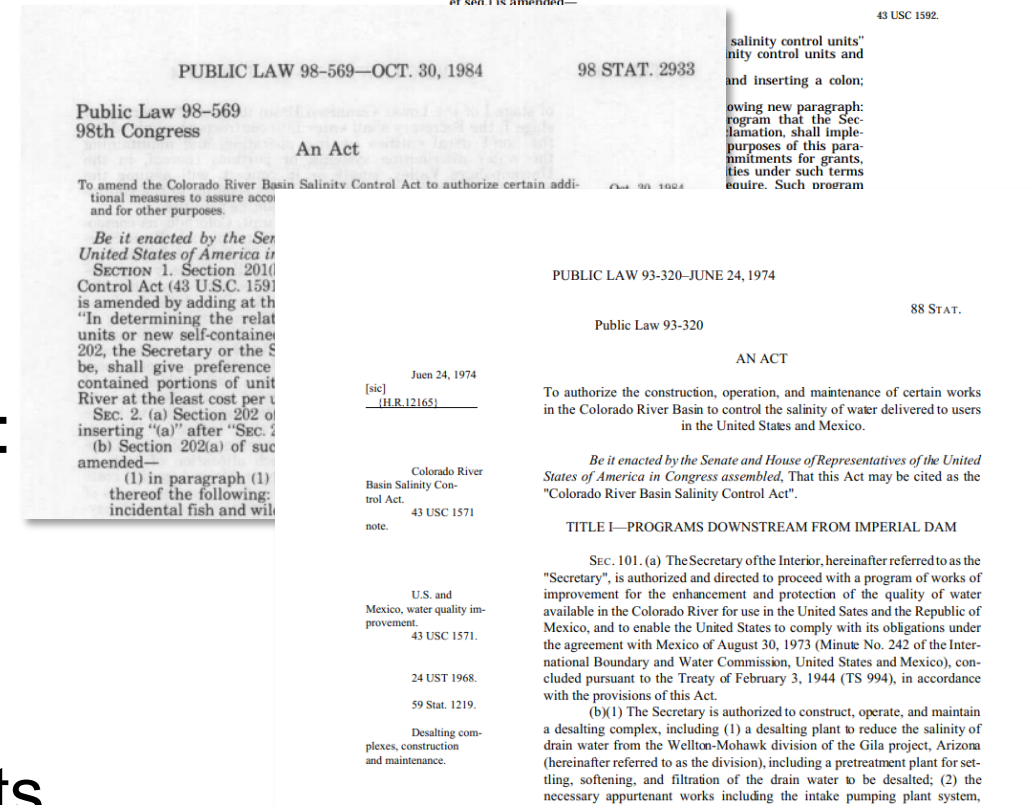
Colorado River System

- 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**



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:
 - below Hoover Dam (723 mg/L),
 - below Parker Dam (747 mg/L)
 - @ Imperial Dam (879 mg/L)
- Additional agreements and amendments



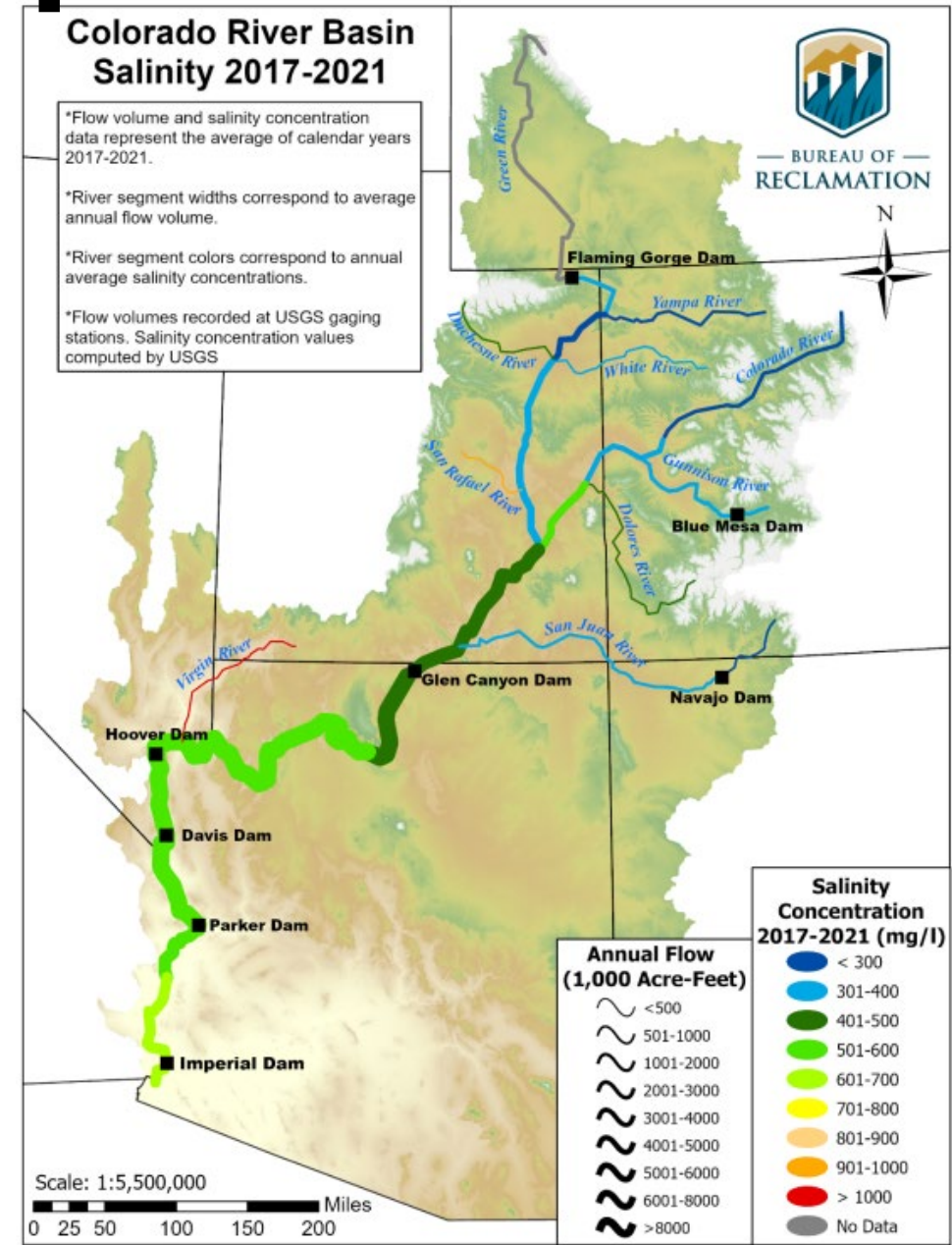
Colorado River Salinity Control Program, Forum, and Advisory Council

- **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



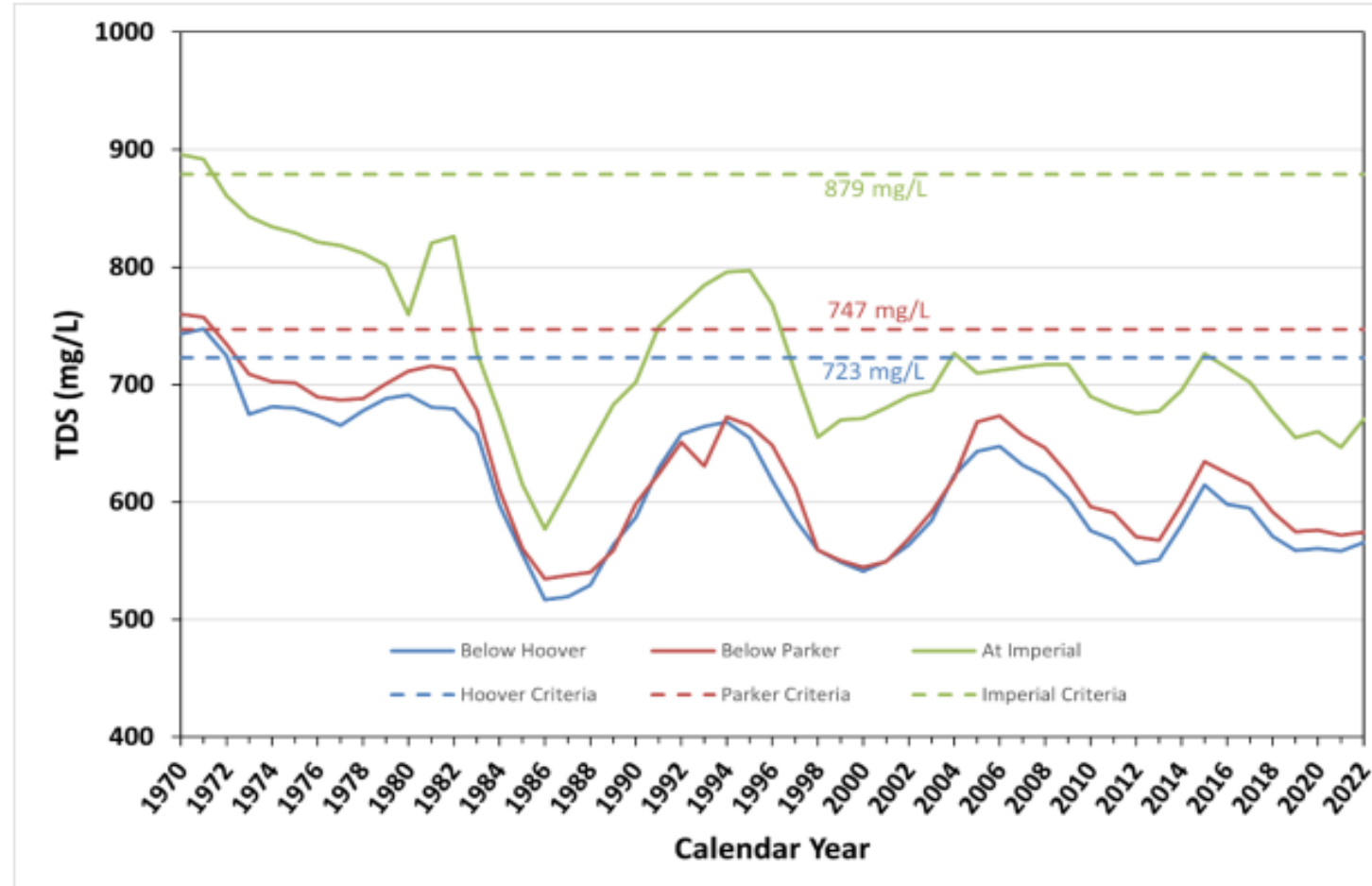
Salinity Sources and Impacts

- Salinity sources are both natural and human-derived
- 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
 - **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



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.