



Dividing^{the} Waters

2022 General Conference

The Colorado River: Is the Law of the River
Relevant to the Emerging Crisis?"

November 30 - December 3, 2022
Santa Fe, New Mexico



Dividing^{the}
Waters



THE NATIONAL
JUDICIAL COLLEGE

Dividing the Waters **The Educational Network for Water Judges**

Dividing the Waters (DTW) is a self-governing program of the National Judicial College (NJC) that provides judges, special masters and administrative hearing officers who preside over water resource related litigation with the educational programming, training and networking resources they need to resolve the litigation in an informed and thoughtful manner.

History. DTW began in 1993 as a discussion forum among judges and special masters who presided over general stream system adjudications in the Western United States. In 2007 DTW affiliated with the National Judicial College (NJC). This affiliation allowed the Program to offer educational programming that integrated the NJC's expertise in judicial education with DTW's expertise in water resource litigation.

Over the years, DTW's educational programming has evolved to address the critical water resource issues judges confront today--climate change, megadrought, urban growth and deterioration of our indispensable watersheds. Despite the evolution of its educational programming, DTW provides today, as it has since 1993, a robust network for judicial officers to communicate with each other in a confidential and collegial setting about substantive and procedural case management issues that arise in complex water cases.

Objectives. DTW believes that judges can best make these important public resource decisions with the support of other judges who know how to navigate water conflicts. Always adhering to the Canons of Judicial Conduct, the program helps judges:

- **Share information** about how the different states and courts have structured and conducted stream adjudications and other complex water law litigation.
- **Discuss problems** in conducting these adjudications and cases, from legal and logistical to intellectual and political.
- **Learn what works** and what does not work, so other judges do not have to make the same mistakes.
- **Benefit from expertise** of technical and scientific resource people who are involved in the many subject areas involved in water cases.
- **Build a water knowledge network** where judges, masters and hearing officers develop lasting personal and professional relationships.

Judicial Participants. Participants in the DTW network include both specialized water judges and judges who may have only one complex water case. These judges may have years of experience in water or are encountering water law for the first time in their professional careers.

Resources. DTW offers a wide range of resources for judges with water cases – from the fundamentals of water law to the science of climate change. Through conferences, workshops, publications and mentoring, judicial officers can learn the latest developments in water law, the nuts and bolts of crafting an enduring decree that provides for variable hydrology, or techniques for using water experts effectively. They can pursue broad interests in water law or obtain personal assistance from other judges on a specific water-related issue. For example, during the recent COVID 19 shut down, DTW offered the following webinars.

- *Surface Water – Groundwater Conflicts: A Four-Part Case Study Of Conjunctive Administration of Water in the Upper Rio Grande Basin*
Aired June 16, July 14, August 18 and September 15, 2022
- *Dam Removal in the Klamath: A Long Overdue Recognition of the Federal Government’s Trust and Treaty Responsibilities to the Tribes of the Lower Basin*
Aired: August 11, 2021
- *The Klamath Water Wars – Twenty Years Later: Irreconcilable Promises: Indian Water Rights vs Reclamation Era Expectations*
Aired March 30, 2021
- *The Emerging Megadrought: A Tale of Two Rivers*
Aired: August 13, 2020
- *Race, Federal Indian Policy and Access to Water*
Aired November 19, 2020

Prior to the COVID-19 shut down, DTW’s more recent conferences were:

- *Sustainable Water Rights Management in Times of Shortage*
April 10 – 13, 2019 | Stanford Law School | Stanford University, Palo Alto, CA
- *Groundwater Law in Transition*
November 1 – 4, 2017 | Baylor University School of Law
- *Established Water Rights and Changing Conditions*,
October 14-17, 2015 | Gonzaga University School of Law | Spokane, Washington

Judicial Oversight of Educational Programing. To ensure that *DTW*’s educational programing is relevant to the challenges of contemporary water resource litigation, its programing is supervised and directed by judges (referred to as “*DTW*’s Conveners”) from several Western States. Presently, DTW’s Conveners are:

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| • Kate Appleby, Judge, Utah Court of Appeals | • Ronald B. Robie, Justice, California Third District Court of Appeals |
| • C. Shannon Bacon, Chief Justice, New Mexico Supreme Court | • Debra J. Stephens, Justice, Washington State Supreme Court |
| • John P. Schlegelmilch, District Judge, Nevada Third Judicial District | • John E. Thorson, Former Special Master, Arizona General Stream Adjudication |
| • Eric Wildman, District Judge, Idaho Snake River Adjudication | |

DTW’s Executive Director is Steve Snyder, a former Special Master for New Mexico’s General Stream Adjudications.

The President's Welcoming Letter



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Dear Friend:

On behalf of the Board of Trustees, faculty and staff, welcome to The National Judicial College.

This college was created nearly 60 years ago at the recommendation of a committee headed by Supreme Court Justice Tom C. Clark. Since then, more than a quarter of a million judges from around the country and abroad have become NJC alumni by taking one course or many. Past participants and instructors include Warren Burger, Stephen Breyer, Anthony Kennedy, Antonin Scalia, Sandra Day O'Connor, and Sonia Sotomayor.

Justice Kennedy has said, "Judicial independence cannot exist unless you have skilled, dedicated, professional judges."

Our goal is to help you carry out your sacred responsibilities confidently, expertly, and sustainably because judging is often a stressful, isolating experience. Know that as a member of the NJC family, you will never be alone. If you are like most participants, you'll build friendships and mentorships with faculty and classmates that last a lifetime. Please consider me to be a part of your support system. I also invite you to join In Chambers, our new private group on Facebook for judges only.

Our college is a nonprofit organization and is, in many ways, a cooperative effort. Many NJC judges choose to give back by donating their time as an instructor (nearly all faculty are volunteers), making a financial contribution, or both. Financial support is necessary to develop new courses, upgrade classrooms, provide scholarships, and other purposes. You can donate online at any time at the NJC website, Judges.org.

Former federal appeals judge Andre Davis, another NJC alumnus, and instructor, has said, "No judge aspires to be average." If this is your first NJC experience, rest assured that you are in good company this week and from this point forward in your career.

Welcome to the NJC family of exemplary judges.

Sincerely,



Hon. Benes Z. Aldana (Ret.)
President

Making the world a more just place by educating and inspiring its judiciary

Judicial College Building, MS 358 • Reno, NV 89557

• www.judges.org

The Course Policy



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Course and Program Attendance Policy Statement

The National Judicial College (NJC) is responsible for the funding agencies that sponsor your attendance. The NJC must ensure that the tax dollars spent on continuing education are utilized for the maximum benefit.

Therefore, the policy and practice of the NJC are to award Certificates of Completion to participants who attend all educational sessions. If a participant is unable to attend a class session(s) due to an emergency situation, the participant must contact the program attorney or judicial education manager for the course immediately.

If any portion of the course needs to be included, the participant may be required to submit a written project determined in consultation with the program attorney for the course. Failure to receive written permission or completion of the written project may result in the denial of the Certificate of Completion and notification to the funding agency.

Continuing Judicial or Legal Education Credits (CJE/CLE)

While NJC courses are nationally recognized by CLE Commissions or Boards, participants are asked to please follow their state's specific filing rules to have their CLE/CJE credits approved. The NJC provides each participant a uniform certificate of attendance form upon completion of applicable NJC courses, detailing how many CLE/CJE hours may be possible. Participants are responsible for filing this form with their state's Continuing Legal Education Commissions or Boards where required. Your state may require you to pay a filing fee for CLE approval. If further clarification is needed, please contact the NJC Registrar's Office at [REDACTED]
[REDACTED]

The amount of CJE/CLE credit you are eligible to receive may be reduced if you are absent during any class sessions. If you need to leave during the class, please make the appropriate deduction from your CJE/CLE request.

Courtesy to Faculty and Fellow Participants

Please note that scheduled breaks will be offered during the class. Therefore, out of respect for your colleagues and speakers, we ask that you not engage in activities that may be distracting during the class. Before each session, we ask that all electronic devices be muted or turned off. If you must take a call during the presentation, please take the call outside of the room.

Harassment Policy Statement

The National Judicial College continues its long-standing commitment to eliminate and prevent bias and any form of harassment.

Harassment is misconduct that uses words or actions to convey disrespect for the human dignity and worth of a person, thereby creating a hostile, offensive work or study environment. Everyone at The National Judicial College must be assured of a work and study environment free from any torment, verbal or physical harassment, and sexual overtures and innuendoes which debilitate morale and interfere with the mission of the College.

Staff, faculty, and participants are accountable for their personal behavior and for supporting and encouraging the rights of all others to be free from improper or inappropriate behavior.

Instances of harassment affecting faculty or participants should be reported to the chief academic officer. Instances of harassment affecting staff members should be reported to the human resource specialist. In the absence of these individuals, the report should be made to the president of the College.

This policy applies, without exception, to all College staff, faculty members, and participants.

Title VI Program Rights Compliance Plan Policy Statement

The National Judicial College (NJC) and President Benes Z. Aldana are committed to and give public notice of NJC's policy to uphold and assure full compliance with the nondiscrimination requirements of Title VI of the Civil Rights Act of 1964 and related nondiscrimination authority. Title VI and related nondiscrimination authority stipulate that no person in the United States of America shall, on the grounds of race, color, national origin, sex, age, disability, income level, or limited English proficiency, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity receiving federal financial assistance.

Any person who desires more information regarding NJC's Title VI Program may contact NJC's Title VI Program Officer Joy Lyngar at the address noted below.

Any person who believes he or she, individually or as a member of any specific class of persons, has been subjected to discrimination on the basis of race, color, national origin, sex, age, disability, income level, or limited English proficiency has the right to file a formal complaint. Any such complaint must be in writing and submitted to NJC within 180 days following the date of the alleged occurrence.

Mail to: Title VI Program
Officer Joy Lyngar,
J.D.
The National Judicial College
Judicial College Building / MS 358
Reno, NV 89557


You may also file a Civil Rights complaint directly with the Office for Civil Rights within the U.S. Department of Justice as well as the Nevada Office of the Attorney General's Grants Unit.

Mail to: U.S. Department of Justice, Civil Rights
Division 950 Pennsylvania Avenue, N.W.
Washington, D.C. 20530
Hotline (English & Spanish): (888) 848-5306

Office of the Attorney General, Grants
Unit 100 North Carson Street
Carson City, Nevada
89701-4717
Phone: (775) 684-1110

Schedule



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A resource for judges resolving water conflicts

Stephen E. Snyder
Executive Director



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Dividing the Waters 2022 General Conference
The Colorado River: Is the Law of the River Relevant to the Emerging Crisis?

La Fonda on the Plaza, Santa Fe, New Mexico, November 30 – December 3, 2022

Wednesday, November 30

**Pre-Conference
Workshop:**

9:00 a.m. – 3:00 p.m.

Fundamentals of Western Water Law

Faculty:

Reed Benson, Don and Mabel Dickason Endowed Chair
in Law and Professor of Law, School of Law, University
of New Mexico

Eric J. Wildman, 5th Judicial District Judge, State of Idaho

Conference:

5:30 pm to 7:30 pm

Reception and Tour of Palace of the Governors

Introduction of Guests and Judges: Chief Justice Shannon Bacon and Justice Robie

7:30 pm: Lecture:

Topic: Science Be Dammed: The Negotiation of the Colorado River Compact

Introduction of Speaker: Justice Debra Stephens

Speaker: John Fleck, Writer in Residence, Utton Center, University of New Mexico Law School,
former Director of the Water Resource Program at UNM, author of *Water is for Fighting and
Other Myths About Water and the West*; Co-author *Science be Dammed: How Inconvenient
Science Drained the Colorado River*

Thursday, December 1

8:00 to 8:30

Overview of Conference, Confidentiality of Sessions, Introductions of Judges Who Missed the
Reception.

8:30 to 10:00: 1st Session

Topic: The Law of the River

Moderator: Judge Schlegelmilch

Faculty

- ◇ Anne Castle, Senior Fellow Getches-Wilkinson Center for Natural Resources, Energy and the Environment, University of Colorado Law School, Federal Commissioner Upper Colorado River Commission. former Assistant Secretary of Water and Science, U.S. Department of Interior
- ◇ Larry MacDonnell, Senior Fellow Getches-Wilkinson Center for Natural Resources, Energy and the Environment

10:00 to 10:30: Refreshment and Networking Break

10:30 to 12:00: 2nd Session

Topic: Hydrologic Conditions, Climate Change, Environmental Issues and Future Water Availability

Moderator: Justice Stephens

Faculty:

- ◇ Jim Prairie, Chief, Upper Colorado Basin Research and Modeling Group, Bureau of Reclamation
- ◇ Jack Schmidt: Professor of Watershed Science, Director Colorado River Studies, Utah State University
- ◇ Ted Kowalski, Senior Program Officer, Walton Family Foundation

12:00 to 1:30: Lunch and Luncheon Speaker

Introduction of Luncheon Speaker: Chief Justice Shannon Bacon

Speaker: Tanya Trujillo, Assistant Secretary for Water and Science, Department of Interior (subject to future scheduling priorities)

1:30 to 3:00 pm: 3rd Session

Topic: Confirmed and Unconfirmed Native American Water Rights in the Colorado Basin

Moderator: John Thorson, retired Assistant Chief Administrative Law Judge, California Public Utility Commission; former Special Master of Arizona General Stream Adjudication

Faculty:

- ◇ Jason Robison, Professor, University of Wyoming College of Law, Lead Editor, *Cornerstone of the Confluence: Navigating the Colorado River Compact's Next Century*
- ◇ Bidtah Becker, Director, Division of Natural Resources, Navajo Nation
- ◇ Daryl Vigil, Co-Facilitator Water & Tribes Initiative



3:00 to 3:30: Refreshment and Networking Break

3:30 to 5:00 pm: 4th Session

Topic: Lower Basin Problems

Moderator: Justice Robie

Faculty:

- ◇ Gregory Walch: General Counsel, Southern Nevada Water Authority
- ◇ Arizona: Tom Buschatzke, Director of Arizona Department of Water Resources
- ◇ Karla Nemeth: Director of California Department of Water Resources

Friday, December 2

All Day Field Trip (Hosted by Pueblo de Cochiti, Albuquerque-Bernalillo County Water Authority, and Utton Center, University of New Mexico Law School)

Site Visits

- ◇ Cochiti Dam and Pueblo de Cochiti
- ◇ Albuquerque-Bernalillo County Water Authority's San Juan-Chama Drinking Water Project, including Adjustable Diversion Dam and Intake Structure, Raw Water Pumping Station and Water Treatment Plant

7:00: Dinner & Special Guest Speaker

Responsible Convener: Chief Justice Bacon

Location: Restaurant Martin

Guest Speaker: Wayne Ranney, award winning geologist and author; former backcountry ranger, river and trail guide

Saturday, December 3

8:00 to 9:30: 5th Session

Topic: Upper Basin Problems

Moderator: Chief Justice Bacon

- ◇ Rebecca Mitchell, Director Colorado Water Conservation Board and Colorado Commissioner Upper Colorado River Basin Commission
- ◇ Esteban Lopez, New Mexico Commissioner of the Upper Colorado River Commission and former Commissioner Bureau of Reclamation
- ◇ Gene Shawcroft, Utah Commissioner of the Upper Colorado River Commission and General Manager Central Utah Water Conservation District



9:30 to 10:00: Refreshment and Networking Break

10:00 to 11:30: 6th Session

Panel Discussion: The Risk, Consequences and Alternatives to a Compact Call on the Upper Basin States

Moderator: John Fleck, Writer in Residence, Utton Center, University of New Mexico Law School, former Director of the Water Resource Program at UNM, author of *Water is for Fighting and Other Myths About Water and the West*; Co-author *Science be Dammed: How Inconvenient Science Drained the Colorado River*

◇ Panelists:

- Eric Kuhn, former General Manager of Colorado River Conservation District, co-author *Science be Dammed: How Inconvenient Science Drained the Colorado River*
- Jenifer Gimbel, Senior Water Policy Scholar, Colorado State University; former Principal Deputy Assistant Secretary for Water and Science, Department of Interior; former Deputy Commissioner of Bureau of Reclamation; former Director of Colorado Water Conservation Board
- Sarah Porter, Director of Kyl Center for Water Policy, Arizona State University

11:30 to 12:30: 7th Session

Topic: Facilitated Discussion Among Conference Participants

◇ Moderator Jason Robison, Professor, University of Wyoming College of Law, Lead Editor, *Cornerstone of the Confluence: Navigating the Colorado River Compact's Next Century*

Discussion Topics (Preliminary):

- In what ways is the Law of the River relevant to the emerging crises in the Colorado River Basin? In what ways is it irrelevant?
- What lessons should and can be learned from the emerging crises in the Basin? Which of those lessons are particularly important for the judiciary to learn?



Faculty Biographies



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Dividing
the Waters

FACULTY BIOGRAPHIES



Convener, Moderator

The Honorable C. Shannon Bacon Chief Justice, New Mexico Supreme Court

Chief Justice C. Shannon Bacon was appointed to the New Mexico Supreme Court on January 25, 2019 after being recommended by a nonpartisan Judicial Nominating Commission. Prior to her appointment, Justice Bacon served as a district court judge on the Second Judicial District Court and as the Presiding Civil Judge. She was also the Bernalillo County Water and Middle Rio Grande Conservancy District Judge. Justice Bacon currently serves on the New Mexico Supreme Court's Equity and Justice Commission, the New Mexico Working Interdisciplinary Networks of Guardian Stakeholders, and Dividing the Waters. She has previously served on the New Mexico Supreme Court Adult Guardianship and Conservatorship Steering Committee (Chair) and Rules Committee, the Bernalillo County Pro Bono Committee (Co-chair), the Supreme Court Personnel Rules Committee (Chair), the Supreme Court Rules of Evidence Committee (Chair) and the District and Metropolitan Judges Association (President). Justice Bacon has also served on non-profit boards that address the needs of youth experiencing homelessness for more than a decade. Prior to taking the bench, Justice Bacon was a partner at Sutin, Thayer and Brown, P.A. and Eaves, Bardacke, Baugh, Kierst and Larson, P.A., focused on complex litigation and appeals.



Faculty

Bidtah N. Becker Executive Director, Division of Natural Resources, Navajo Nation

Bidtah Becker is a citizen of the Navajo Nation and currently serves as the Executive Director of the Navajo Nation Division of Natural Resources, overseeing 12 departments with a staff of over 500. Her career has been dedicated to serving the Navajo Nation in several different roles since 2002 with the exception of a nine-month sojourn as the CalEPA Deputy Secretary for Environmental Justice, Tribal Affairs, and Border Relations. Bidtah has served on the Water and Tribes Initiative in the Colorado River Basin where she co-chaired the Universal Access to Clean Water effort, on the New Mexico Interstate Stream Commission, and on the Navajo Nation Water Rights Commission. Bidtah is also a champion for Indigenous arts and artists. In 2012, President Obama appointed her to serve as a trustee for the Institute of American Indian Arts and Culture where she still serves. She and her husband are Sustainers of GallupARTS, a nonprofit arts council serving Northwest New Mexico and 2021 recipient of the Governor's Award for Excellence in the Arts in New Mexico. President Biden nominated her and the Senate confirmed her to serve as Member of the National Council on the Arts. She has also served two separate terms on the board for the Southwestern Association of Indian Arts, including one year as board chair.

FACULTY BIOGRAPHIES



Faculty

Reed D. Benson

Dickason Chair and Professor of Law, University of New Mexico School of Law

Professor Reed Benson teaches water law, natural resources, and administrative law at the University of New Mexico School of Law, and directs the law school's Natural Resources and Environmental Law Program. Benson has published over thirty-five articles on western water law and policy, and co-authored the Water Resource Management casebook from Foundation Press. He was a Fulbright Scholar in 2015, serving as Visiting Chair in Water and the Environment at the University of Lethbridge in Alberta, Canada. From 2002-08 he served on the University of Wyoming law faculty. He has been active with the nonprofit Foundation for Natural Resources and Energy Law, and in 2021 he received the Foundation's Clyde O. Martz Award recognizing career achievement by a law professor. Before he began teaching, Benson worked in Oregon for the nonprofit conservation group WaterWatch, including five years as executive director. He has also worked as an attorney for a Boulder, Colorado law firm, for the U.S. Environmental Protection Agency in Washington, DC, and for a conservation group based in Colorado.



Faculty

Tom Buschatzke

Director, Arizona Department of Water Resources

Tom Buschatzke was appointed Director of the Arizona Department of Water Resources in January 2015. With over four decades of water management experience, he is responsible for carrying out ADWR's mission: To safeguard the health, safety and economic welfare of the public by protecting, conserving and enhancing Arizona's water supplies in a bold, thoughtful and innovative manner. Buschatzke also serves as Arizona's principal negotiator on matters relating to the Colorado River. He co-chaired the public, stakeholder-anchored group that produced Arizona's Drought Contingency Plan, and is now co-chair of the Arizona Reconsultation Committee. Buschatzke is the Chairman of both the Arizona Water Banking Authority and the Governor's Water Augmentation, Innovation and Conservation Council. He also is an advisory member of the newly created Water Infrastructure Finance Authority board. Prior to his service as ADWR Director, Buschatzke served as the Water Resources Management Advisor for the City of Phoenix, served on the Board of Directors of the Western Urban Water Coalition, has served as Chair of their Endangered Species Act Committee.

FACULTY BIOGRAPHIES



Faculty

Anne J. Castle

Senior Fellow, Getches-Wilkinson Center, University of Colorado School of Law

Anne Castle is a senior fellow at the Getches-Wilkinson Center for Natural Resources, Energy, and the Environment at the University of Colorado School of Law, focusing on western water issues, including Colorado River policy and management. Castle is a recovering lawyer, having practiced law for 28 years in Denver with Holland & Hart LLP, specializing in water issues. From 2009 to 2014, Castle was Assistant Secretary for Water and Science at the U.S. Department of the Interior, where she spearheaded the Department's WaterSMART program, and launched the federal Open Water Data Initiative. She was appointed by President Biden as the U.S. commissioner for the Upper Colorado River Commission, and is a founding member of the Water Policy Group. She currently serves on far too many boards and committees, including the Colorado Water Trust, Colorado Legal Services, Stanford University's Water in the West program, and is a co-founder of an initiative on Universal Access to Clean Water for Tribal Communities.



Faculty

John Fleck

Writer in Residence, Utton Transboundary Resources Center, University of New Mexico School of Law

John Fleck, a former science journalist, has directed his focus on the problems of the Colorado River. As a Professor of Practice in Water Policy and Governance in the University of New Mexico Department of Economics, he co-teaches classes in contemporary water policy issues, modeling, and technical communication for water managers. He served as director of the University of New Mexico Water Resources Program from 2016-21, and is now Writer in Residence with the Utton Transboundary Resources Center at the University of New Mexico School of Law. He first wrote about water in the 1980s as a beat reporter covering the Metropolitan Water District of Southern California. He is the author of the book *Water is for Fighting Over: And Other Myths About Water in the West*, an exploration of solutions to the Colorado River Basin's water problems. He is co-author with Eric Kuhn of *Science Be Dammed: How Ignoring Inconvenient Science Drained the Colorado River*.

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Brandon Gebhart
Wyoming State Engineer

Brandon Gebhart was appointed by Governor Mark Gordon to Wyoming State Engineer in 2021. Prior to the appointment, Gebhart was Director of Wyoming's Water Development Commission. He has spent more than 20 years in consulting engineering, primarily working in the field of water resources. He earned a civil engineering degree from the University of Wyoming, and is a licensed Professional Engineer.

Faculty



Jennifer Gimbel
Senior Water Policy Scholar, Colorado State University

Jennifer Gimbel has had the opportunity to work for both State and Federal governments on western water issues. For the Department of the Interior she worked as the Principal Deputy Assistant Secretary for Water and Science, and Deputy Commissioner for the Bureau of Reclamation. For the State of Colorado, she worked as the Director of the Water Conservation Board and was appointed by the Governor of Colorado as Commissioner on the Upper Colorado River Commission, as well as the Governor's representative in Colorado River negotiations. She also held several positions with both the Colorado and Wyoming Attorney Generals Offices.

Panelist

FACULTY BIOGRAPHIES

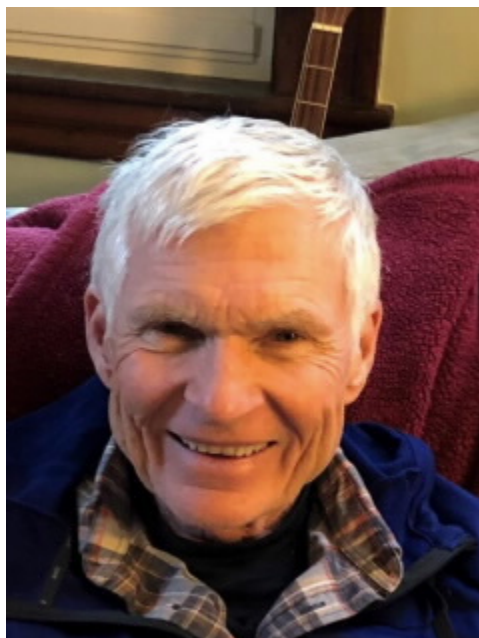


Faculty

Ted Kowalski

Senior Program Officer, Environment Program, Walton Family Foundation

Ted Kowalski is a senior program officer, leading the Walton Family Foundation's Colorado River initiative. In this role, Ted supports work that promotes sustainable management of the Colorado River in order to benefit rivers and communities. Prior to joining the foundation, Ted was the Chief of the Interstate, Federal and Water Information Section for the Colorado Water Conservation Board. In this role, Ted represented the State of Colorado in State, Federal, inter-State, and international negotiations. Ted has testified before the U.S. Congress and before the Colorado General Assembly, and he has spoken at dozens of conferences. He started his career in the Colorado Attorney General's office working on water law issues.



Panelist

Eric Kuhn

General Manager Emeritus, Colorado River Water Conservation District

Eric Kuhn is the retired General Manager of the Colorado River Water Conservation District and co-author with John Fleck of *Science Be Dammed: How Ignoring Inconvenient Science Drained the Colorado River*, University of Arizona Press, 2019. Kuhn started employment with the Colorado River District in 1981 as Assistant Secretary-Engineer. In 1996 he was appointed General Manager, a position he held until his retirement in 2018. Kuhn and Fleck's book, *Science Be Dammed*, is about Colorado River hydrology, what we knew, when we knew it, and how we used it to shape the over-allocation of the river under the 1922 compact, the other major provisions of the law-of-the-river, and the projects we have in place today.

FACULTY BIOGRAPHIES



Estevan López

Upper Colorado River Compact Commissioner, New Mexico

Estevan López is New Mexico's Upper Colorado River Compact Commissioner by appointment of Governor Lujan-Grisham, and Governor's Representative on Colorado River matters. He is a native New Mexican with over 35 years of engineering experience including top-level water management. He served as Commissioner of the US Bureau of Reclamation from 2014-17. Before that, he served as Director of the New Mexico Interstate Stream Commission from 2003-14, during which he also served as Upper Colorado River Compact Commissioner and Governor's Representative on Colorado River matters or New Mexico's alternate to those positions.

Faculty



Lawrence J. MacDonnell

Senior Fellow, Getches-Wilkinson Center, University of Colorado School of Law

Lawrence MacDonnell is an attorney in Boulder, Colorado, who retired in 2013 as a professor of law at the University of Wyoming College of Law where he taught water law, public land law, and natural resources law. He is a Senior Fellow at the Getches-Wilkinson Center at the University of Colorado School of Law. He was the first director of the predecessor Natural Resources Law Center, a position he held between 1983 and 1994. Prior to joining the faculty at the University of Wyoming College of Law, he worked in private law practice and for nonprofits. His publications include numerous books, law review articles, other journal articles, and research reports. He has given over 250 invited presentations.

Faculty

FACULTY BIOGRAPHIES



Faculty

Rebecca Mitchell

Upper Colorado River Compact Commissioner, Colorado

Rebecca Mitchell (Becky) serves as the Colorado Commissioner to the Upper Colorado River Commission, as well as the Director of the Colorado Water Conservation Board. She is an accomplished water leader with over 20 years of experience in the water sector and highly knowledgeable in Colorado water law. Mitchell played a significant role in developing the Colorado Water Plan, working with the state's nine basin roundtables, the Interbasin Compact Committee, and the public. She has worked in both the public and private sectors as a consulting engineer; she received both her B.S. and M.S. from the Colorado School of Mines.



Faculty

Karla Nemeth

Director, California Department of Water Resources

Karla Nemeth was appointed Director of the California Department of Water Resources by Governor Edmund G. Brown Jr. on January 10, 2018 and was reappointed by Governor Gavin Newsom on June 28, 2019. In cooperation with other agencies, DWR manages California's water resources to benefit the state's people, and to protect, restore, and enhance the natural and human environments. Nemeth focuses on preparing the Department and state to adapt to more extreme weather as a result of climate change – investing in aging and green infrastructure, better management of groundwater supplies, and various programs to improve local water resilience. Prior to joining DWR, Nemeth worked at the California Natural Resources Agency as Governor Brown's deputy secretary and senior advisor for water policy since 2014. She was the Bay Delta Conservation Plan project manager from 2009 to 2014. Prior to her work in natural resources management, Nemeth lived, worked and traveled extensively in eastern Europe promoting the development of democratic institutions. In 2010 Nemeth traveled to the Philippines as an election monitor. She is passionate about good government and serving the public.

FACULTY BIOGRAPHIES



Panelist

Sarah Porter

Director, Kyl Center for Water Policy, Arizona State University Institute for Public Policy

Sarah Porter is Director of the Kyl Center for Water Policy at ASU's Morrison Institute for Public Policy. Prior to the Kyl Center, Sarah was the Arizona state director of the National Audubon Society and led a multi-state initiative to protect and restore important river habitats. Sarah serves on Governor Ducey's Water Augmentation Council and University of Arizona's Water Resources Research Center's External Advisory Council. She chairs the Phoenix Parks and Recreation Board, serves on Phoenix's Environmental Quality Commission and several other non-profit boards. Porter is also an attorney, having obtained her juris doctor from Arizona State University. She clerked for federal appellate Judge William Canby and was a litigator for Brown & Bain; Coppersmith Gordon Schermer Owens & Nelson, PLC; and Osborn Maledon PA. She left her law career in 2006 for Audubon because she wanted to contribute to a collaborative effort to address Arizona's natural resource challenges.



Tour Guide

Stephen Post

Deputy Director Emeritus, New Mexico Office of Archaeological Studies

For the last 45 years Stephen Post has directed or participated in hundreds of archaeological studies spanning 12,000 years of New Mexico's past. From 2002 and 2008, he directed excavations in downtown Santa Fe at the sites of the New Mexico History Museum and the Santa Fe Community Convention Center, which illuminated 1500 years of Native American, Spanish, and American Territorial life. He has worked in Guatemala and Yap Island within the Federated States of Micronesia. Recently, he has focused on the nineteenth and early twentieth-century settlements in the Upper Pecos River Valley in San Miguel County, New Mexico. He is co-Curator of Palace Seen and Unseen: A Convergence of History and Archaeology installed as a permanent exhibit in the Palace of the Governors.

FACULTY BIOGRAPHIES



James Prairie

Chief, Upper Colorado Basin Research and Modeling Group, Bureau of Reclamation

James Prairie, Ph.D. is the Research and Modeling Group Chief working in Reclamation's Upper Colorado Basin Region since 2000. He is stationed at the University of Colorado's Center for Advanced Decision Support for Water and Environmental Systems. Dr. Prairie leads applied research in short and mid-term operations and long-term water resource planning, climate variability, and decision support under uncertainty. His group pursues relevant research projects and seeks to transition their findings in Reclamation's current operations and planning activities. He further directs river basin modeling technical teams; and oversees the consumptive use, natural flow and natural salinity development programs for the Upper Colorado River basin.

Faculty



Wayne Ranney

Geologic Educator, Award-Winning Author, Backcountry Guide

With nearly 50 years of experience, Wayne Ranney can truly claim to be a 'child of the Grand Canyon'. A former backcountry ranger, river and trail guide, and award-winning geologist and author, Wayne has lived a life of outdoor adventure, scientific and intellectual pursuits. Wayne has authored ten books, including *Carving Grand Canyon*, *Ancient Landscapes of the Colorado Plateau*, and *Sedona Through Time*. He is the 2021 recipient of the John D. Haun Award presented by the Association of American Petroleum Geologists, and a two-time recipient of awards from the Rocky Mountain Association of Geologists. He has appeared as a consulting geologist on numerous documentaries with The History Channel, Discovery Channel, National Geographic, PBS, and NPR. He served as geologic consultant on the 2022 version of the IMAX film, *Grand Canyon: The Hidden Secrets*. Many thousands of people have taken seminars from Wayne, or have hiked or rafted with him. He has served as a geologic interpreter for Smithsonian Journeys, National Geographic and the Museum of Northern Arizona, exploring over 85 countries. He has run the Colorado River in Grand Canyon over 100 times and guided hikes in the American Southwest many hundreds of times.

Panelist

FACULTY BIOGRAPHIES



Convener, Moderator

The Honorable Ronald B. Robie

Associate Justice, California Third District Court of Appeal

Justice Ronald B. Robie has been a presiding justice of California's Third District Court of Appeal since June of this year. His prior judicial positions include Judge of the Municipal Court, Sacramento Judicial District (1983-86); Judge of the Superior Court of California, County of Sacramento (1986-2002). He also chaired the Environmental Law Section of the Sacramento County Bar, and has been the Director of the California Department of Water Resources, Vice Chair of the State Water Resources Control Board, and was on the Board of Directors of the National Center for State Courts. Currently, he is on the Board of Directors of the Water Education Foundation, Chairs the Supreme Court Committee on Judicial Ethics and Opinions, and is a co-convener for Dividing the Waters. He is also co-author of *California Civil Practice, Environmental Litigation* (Thomson West) 1993-2023, and has taught water and environmental law as an adjunct professor at Pacific McGeorge School of Law.



Faculty

Jason Anthony Robison

Professor of Law, University of Wyoming College of Law

Professor Jason Anthony Robison teaches Water Law & Policy, Federal Indian Law, Federal Courts, and other subjects at the University of Wyoming College of Law. Jason joined the UW faculty after completing his S.J.D. at Harvard Law School. He has also earned an LL.M. from Harvard Law School, a J.D. from the University of Oregon School of Law, and a B.S. in environmental studies from the University of Utah. Jason is the editor of the Colorado River Compact centennial volume, *Cornerstone at the Confluence: Navigating the Colorado River Compact's Next Century* (2022). He also authored the treatise *Law of Water Rights & Resources*, and was lead editor of *Vision & Place: John Wesley Powell & Reimagining the Colorado River Basin* (2020). Jason serves as the chair of the Colorado River Research Group and as a member of the leadership team for Water & Tribes Initiative in the Colorado River Basin.

FACULTY BIOGRAPHIES



The Honorable John P. Schlegelmilch

District Judge, Lyon County Third Judicial District Court, Nevada

John “JP” Schlegelmilch is a judge of the Third Judicial District Court in Lyon County, Nevada, initially elected in 2014. He was previously in self-established private practice at the Law Offices of John P. Schlegelmilch Ltd. and before that he was Chief Deputy District Attorney for Lyon County. A true rural practitioner, he traveled rural Nevada representing a vast variety of clients in litigation related matters. He has tried in excess of 50 criminal (both as a prosecutor and defense counsel) and civil (both plaintiff and defense) jury trials during his career. His legal experience includes criminal, real property, water, domestic relations, business, personal injury, estates, probate, and a variety of other issues. He served on the Board of Governors for the State Bar of Nevada between 1999 and 2005 as the state bar’s rural representative, and currently serves on the Nevada Access to Justice Commission and Nevada Commission on the Adjudication of Water Case, and is also a convener for Dividing the Waters. He received his J.D. from the Willamette University College of Law in 1991.

Convener, Moderator



Jack Schmidt

Janet Quincy Lawson Chair in Colorado River Studies and Professor of Watershed Sciences, Utah State University

Jack Schmidt is Professor of Watershed Sciences and Janet Quinney Lawson Chair in Colorado River Studies at Utah State University, where he leads the Center for Colorado River Studies. Jack is a geomorphologist by training, and he has focused his research on the processes and ecological history of rivers, the effects of large dams, and strategies to mitigate the adverse impacts of river development. Schmidt received the National Park Service Director’s Award for his career of work concerning large, regulated rivers of the National Park system, and he was a co-recipient of the Department of the Interior Partners in Conservation award for work contributing to the pulse flow in the Colorado River delta in Mexico. He served as Chief of the USGS Grand Canyon Monitoring and Research Center between 2011 and 2014.

Faculty

FACULTY BIOGRAPHIES



Faculty

Gene Shawcroft

Upper Colorado River Compact Commissioner, Utah

Gene Shawcroft was appointed the Colorado River Commissioner of Utah by Governor Spencer Cox and leads Utah's new seven-member Colorado River Authority, represents Utah on all Colorado River issues, and serves as a member of the Upper Colorado River Commission. He is also the General Manager for Central Utah Water Conservancy District, the state's largest water conservancy district. Shawcroft grew up on a farm in southern Colorado and enjoyed working and playing in the water. After graduating from Brigham Young University with bachelor's and master's degrees in Civil Engineering, he joined the State of Utah at the Division of Water Resources. Shawcroft came to the Central Utah Water Conservancy District in 1991 and served as a Project Engineer, Assistant General Manager, Deputy General Manager, and was appointed General Manager in January of 2015.



Convener, Moderator

The Honorable Debra L. Stephens

Associate Justice, Washington State Supreme Court

Justice Debra L. Stephens has been a member of the Washington State Supreme Court since January 2008 and served as the court's 57th chief justice. Justice Stephens previously served as a judge for Division Three of the Court of Appeals and is the first judge from that court to join the Washington State Supreme Court, as well as the first woman from Eastern Washington to do so. A native of Spokane, Washington, she practiced law and taught as an adjunct professor at Gonzaga University School of Law prior to taking the bench. A leader in judicial and public education, she serves on the Washington Civic Learning Council, as a founding executive committee member of the National Courts and Sciences Institute and a convener for Dividing the Waters. Justice Stephens is active in the National and International Association of Women Judges and co-chairs its Judicial Independence Committee. Justice Stephens has received numerous recognitions for her work, including the "Judge of the Year" award from the Washington State Association for Justice, the "Myra Bradwell Award" from the Gonzaga Women's Law Caucus, the "Leadership & Justice Award" from Mother Attorneys Mentoring Association, the "Distinguished Judicial Service Award" from Gonzaga University School of Law, and the "President's Award" from Washington Women Lawyers. The Washington Board for Judicial Administration presented her the "Innovating Justice" award in recognition of her leadership of the judicial branch during the COVID-19 crisis.

FACULTY BIOGRAPHIES



Convener, Moderator

John E. Thorson

Federal Water Master, Lummi Decree, Western District of Washington

John Thorson serves as the Federal Water Master for the Lummi Decree and recently completed three years of service as Chair of the Missouri River Recovery Implementation Committee, a 70-member sovereign-stakeholder Congressionally authorized committee advising federal agencies on restoration of the Nation's longest river. Now living in western Montana, Thorson retired as Assistant Chief Administrative Law Judge with the California Public Utilities Commission in San Francisco where he concentrated on water cases, adjudicatory matters, and alternative dispute resolution. For a decade, Thorson was Special Master, appointed by the Arizona Supreme Court to preside over that state's general stream adjudications. Thorson also served as counsel for the Western Governors' Conference and Executive Director, Conference of Western Attorneys General, as well as Chair of the Water Resources Committee and Publications Officer of the ABA Section of Environment, Energy and Resources. For four years, he served as Section Coordinator for Year in Review, an annual presentation of legal developments in environment, energy, and resources law. He has taught water law, environmental law, and conflict resolution at six universities in the U.S. and Mexico. He is also co-founder/co-convener of Dividing the Waters. He has authored and co-authored four books and over 50 published articles and monographs.



Guest Speaker

Camille Touton

Commissioner, Bureau of Reclamation

Camille Touton was sworn in as Bureau of Reclamation Commissioner on December 15, 2021. Prior to joining the Biden-Harris administration, Touton served as Professional Staff for the U.S. House Committee on Transportation and Infrastructure. Camille's congressional experience also includes serving as Professional Staff for Interior's authorization committees: the Senate Energy and Natural Resources Committee and the House Natural Resources Committee. Camille also served as Interior's Deputy Assistant Secretary for Water and Science under the Obama administration. Camille holds a Bachelor of Science in civil engineering, a Bachelor of Arts in communication studies, and a Master of Public Policy.

FACULTY BIOGRAPHIES



Tanya Trujillo

Assistant Secretary for Water and Science, Department of the Interior

Tanya Trujillo was sworn in as Assistance Secretary for Water and Science on June 25, 2021. She is a water lawyer with more than 20 years of experience working on complex natural resources management issues and interstate and transboundary water agreements. She most recently worked as a project director with the Colorado River Sustainability Campaign. Before then, she served as the Executive Director of the Colorado River Board of California. She has served as Senior Counsel to the U.S. Senate Energy and Natural Resources Committee and as Counselor to the Assistant Secretary for Water and Science at Interior. A native New Mexican, Trujillo attended Stanford University and the University of Iowa College of Law.

Guest Speaker



T. Daryl Vigil

Co-Facilitator, Water and Tribes Initiative

T. Daryl Vigil is Co-facilitator for the Water & Tribes Initiative and is a member of the Board of Trustees for the Colorado River Water Users Association. He previously served as the Chairman of the Colorado River Ten Tribes Partnership and the Interim Executive Director and official spokesperson for the Ten Tribes Partnership. He was also previously a member of the Coordination Committee of the San Juan River Recovery and Restoration Project, the past Secretary/Treasurer of the Colorado River Water Users Association, and the Chairman of the Board of the Jicarilla Apache Utility Authority. Vigil has also held the position of President/CEO of the Apache Nugget Corporation, the Jicarilla Apache Nation's Gaming Enterprise.

Faculty

FACULTY BIOGRAPHIES



Faculty

Gregory J. Walch

General Council, Southern Nevada Water Authority

Gregory Walch was named General Council to the Southern Nevada Water Authority (SNWA) in 2012. He works closely with colleagues in the federal government and Colorado River basin states on various Colorado River flexibility and sustainability issues. Walch is a member of the SNWA and Las Vegas Valley Water District Executive Team, oversees the legal department of both agencies, and reports directly to the General Manager. In addition to his duties at both agencies, Walsh recently taught water law at the University of Nevada Boyd School of Law as an adjunct professor. He received his Juris Doctor in May 1992 from Lewis & Clark Northwestern School of Law, and has since practiced environmental, water, land use, mining, eminent domain, and administrative law in the Southern Nevada area. In 1996, Walch co-founded the law firm now known as Holley Driggs and is recognized by Chambers USA, Mountain States Super Lawyers, and Martindale Hubbell for his work in environmental and natural resources law.



Convener, Faculty

The Honorable Eric J. Wildman

Administrative District Judge, Idaho Fifth Judicial District

Judge Eric J. Wildman is a district judge for the state of Idaho. He was appointed to the bench in 2010. The Idaho Supreme Court assigned him to preside over the Snake River Basin Adjudication, the Coeur D'Alene–Spokane River Basin Adjudication, the Palouse River Basin Adjudication, the Clark-Fork Pend Oreille Basin Adjudication, the Bear River Basin Adjudication, and over statewide appeals from the Idaho Department of Water Resources. Judge Wildman received his undergraduate degree from the University of Utah and his juris doctorate from the University of Idaho, College of Law. Some of his interests include skiing, backpacking, rock and ice climbing, and motorcycles.

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NJC Staff Biographies

HONORABLE BENES Z. ALDANA (RET.), PRESIDENT

Benes Z. Aldana became the ninth president of The National Judicial College on May 1, 2017. Before joining the NJC, he was on active duty in the U.S. Coast Guard for over 22 years, retiring in the rank of captain and serving as chief trial judge during his last tour of duty. Prior to this assignment, he served as the chief legal officer for the 8th Coast Guard District in New Orleans, Louisiana, overseeing legal advice to Coast Guard operations spanning 26 states and the Gulf of Mexico. He was first appointed a military trial judge in 2005 and as an appellate judge in 2015. Other notable assignments as a Coast Guard judge advocate included: chief counsel, Legal Engagements Division, U.S. Africa Command in Stuttgart, Germany; deputy staff judge advocate, 13th Coast Guard District; special assistant U.S. attorney for the Western District of Washington; trial attorney at the Department of Justice, Environment and Natural Resources Division; legal advisor to the Department of Defense Criminal Investigation Task Force, Guantanamo Bay, Cuba; deputy chief, Office of Environmental Law, U.S. Coast Guard; and appellate and trial counsel. He also served as the commanding officer, personnel services and support unit, Seattle, and executive officer for Coast Guard Base Seattle. He is also a dedicated bar association leader and served as 2009 president of the Asian Bar Association of Washington. Although he grew up in the Seattle area, graduating from Seattle University and University of Washington School of Law, his career has taken him around the world. Among his many other achievements and accomplishments, he served as 2012-2013 chair of the American Bar Association Solo, Small Firm, and General Practice Division, which has approximately 20,000 members and is one of the largest entities in the ABA. He also served in the ABA House of Delegates and on the ABA Rule of Law Initiative Board, ABA Standing Committee on Judicial Independence, ABA Commission on Diversity and Inclusion 360, and as the assembly speaker of the ABA Young Lawyers Division. He recently concluded his service as a member of the ABA Law and National Security Advisory Committee. His military awards include the Defense Meritorious Service Medal, two Coast Guard Meritorious Service Medals, four Coast Guard Commendation Medals, the Army Commendation Medal, two Coast Guard Achievement Medals, and two Commandant's Letters of Commendation, as well as various team and unit awards. Non-military awards include the DHS General Counsel's Award of Excellence, the NAPABA Daniel Inouye Trailblazer Award, ABAW Judge of the Year, ABA Outstanding Young Military Lawyer Award, NAPABA's "Best Lawyer Under 40," and the American Bar Foundation Fellows Outstanding Chair Award.

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NJC Staff Biographies

JOY LYNGAR, J.D., PROVOST

Joy D. Lyngar joined The National Judicial College in 2007 and was named Provost in 2018. As such, she is ultimately responsible for the quality and relevance of all education offered by the oldest and largest school for judges in the U.S. For over fifteen years, she has been an executive leader working to improve the justice system by educating judges, providing technical assistance, facilitating cross-jurisdiction sharing of best practices, encouraging judicial leadership, and by setting the bar for the highest standards of judicial ethics and competence. Over the past decade, Ms. Lyngar has led NJC to record academic achievement; NJC now educates more than 10,000 judges and court service professionals each year through in-person and on-line courses. Before joining the NJC, Ms. Lyngar spent 10 years at the National Council of Juvenile and Family Court Judges, most recently as director of the Juvenile and Family Law Department. Ms. Lyngar is a regular faculty member for NJC, and President-Elect of the National Association of State Judicial Educators. Prior to her work in national judicial education, Ms. Lyngar practiced law in Canada working in a general practice firm that handled criminal defense, civil litigation, and family law. Ms. Lyngar received a bachelor's degree and Juris Doctor from the University of Saskatchewan.

The Roster



THE NATIONAL
JUDICIAL COLLEGE



Dividing
the Waters

Dividing the Waters Conference

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Santa Fe, New Mexico

Convener

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Dividing the Waters Conference
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Santa Fe, New Mexico

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Dividing the Waters Conference
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Santa Fe, New Mexico

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Dividing the Waters Conference
November 30, 2022 — December 3, 2022
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Dividing the Waters Conference
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Dividing the Waters Conference

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Santa Fe, New Mexico

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Dividing the Waters Conference
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Guest Speakers

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Dividing the Waters Conference
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Dividing the Waters Conference
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Dividing the Waters Conference
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Dividing the Waters Conference
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Dividing the Waters Conference
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Santa Fe, New Mexico

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Dividing the Waters Conference
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Dividing the Waters Conference
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November 30, 2022 — December 3, 2022
Santa Fe, New Mexico

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COLORADO RIVER BASIN*

By Lawrence J. MacDonnell, Esq.**

Synopsis

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* This chapter is dedicated to the late Dean David Getches, formerly of the University of the Colorado School of Law, who co-authored with me the original version of this chapter. My thanks to Robert Wigington for his helpful comments. Remaining errors are my responsibility.

** Retired Professor of Law, University of Wyoming College of Law; Senior Research Fellow, Getches-Wilkinson Center, Colorado Law.

3. Upper Colorado River Endangered Fish Species Recovery Program.
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IV. Tribes and Water in the Colorado River Basin.

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APPENDIX 1. Leasing Provisions in Tribal Water Settlements.

I. Introduction.

The Colorado River, once regarded as the most contentious water source in the United States, faces unparalleled challenges. Global warming already has affected the basin's water supply, reducing reliable additions of water to an already badly overallocated and overused system.¹ The seven basin states, the United States, tribes, and the Republic of Mexico are searching for ways to restore balance to the basin's water budget while meeting critical environmental, recreational, and economic needs.

There is an almost mythic quality about the Colorado River. It has been the subject of substantial books² and countless studies and articles.³ Drawing from this rich

¹ Western Water Assessment, Colorado River Basin Climate and Hydrology State of the Science (2020).

² See, e.g., John Fleck, *Water is for Fighting* (2016); Philip Fradkin, *A River No More* (1981); Norris Hundley, Jr., *Water and the West: The Colorado River Compact and the Politics of Water in the American West* (1975); Eric Kuhn and John Fleck, *Science Be Dammed: How Ignoring Inconvenient Science Drained the Colorado River* (2019); Russell Martin, *A Story That Stands Like A Dam: Glen Canyon and the Struggle for the Soul of the West* (1989); New Courses for the Colorado River (Gary D. Weatherford & F. Lee Brown eds., 1986); David Owen, *Where the Water Goes* (2017); John W. Powell, *The Exploration of the Colorado River and its Canyons* (Dover Edition 1961); April R. Summitt, *Contested Waters: An Environmental History of the Colorado River* (2013); John Upton Terrell, *Water for the Colorado River*, 2 vols. (1965); *Values and Choices in the Development of the Colorado River Basin* (Dean F. Peterson & A. Berry Crawford eds., 1978).

³ Essential sources for locating many of the important documents relating to the federal government's extensive involvement in Colorado River Basin matters are Ray L. Wilbur & Northcutt Ely, *The Hoover Dam Documents*, H.R. Doc. No. 717, 80th Cong., 2d Sess. (Washington, D.C., 1948); Milton N. Nathanson, Bureau of Reclamation, U.S. Department of the Interior, *Updating the Hoover Dam Documents* (1978); and U.S. Department of the Interior, Bureau of Reclamation, *The Colorado River Documents*, 2008 (September 2010). For a study anticipating the issues raised by a severe sustained drought, see *Severe Sustained Drought in the Southwestern United States*, Report to the U.S. Department of State, Man and Biosphere Program (Frank Gregg, ed., 1991); *Coping with Severe Sustained Drought in the Southwestern United States*, Water Resources Bull., Vol. 31, No. 5, October 1995. A selection of the extensive law review literature addressing the Colorado River includes Warren J. Abbott, *California Colorado River Issues*, 4 Pac. L.J. 1391 (1988); Robert W. Adler, *Revisiting the Colorado River Compact: Time for a*

literature, this chapter provides background about the basin itself, its history related to water development and use, current human uses of water, its extensive legal framework known as the Law of the River, and tribal water rights in the basin.

II. An Overview of the Basin.

A. The Setting.

The Colorado River originates high in the Rocky Mountains, on the west side of Rocky Mountain National Park in north central Colorado. The Rockies, a product of the Laramide orogeny, serve as a barrier to moisture coming from the west, and collect wintertime snowfall that melts in the spring and summer, producing river flows. The Colorado River moves through the complex mountainous topography of western Colorado before entering into Utah, where, just downstream of the Town of Moab, it joins its major tributary, the Green River, which drains western Wyoming from the Wind River Range as well as a portion of the Uintas in Utah. The enlarged river then moves into the Colorado Plateau where it has worked for millions of years to erode a passageway through thousands of feet of primarily sedimentary rock to create some of the most spectacular scenery on earth. Ultimately, it passes through desert lands below Hoover Dam on its way to join the Gulf of California. John Wesley Powell first put much of this river on the map with his extraordinary journey in 1869, leaving the railroad crossing at Green River, Wyoming, in four small boats with his original crew of nine, and heading into truly uncharted places, many of which today bear the names he and his crew gave them.⁴

The basin's 244,000 square miles encompass portions of seven states in the United States, and two states in Mexico. The length of its mainstem, 1450 miles, makes it the

Change, 28 J. Land Resources & Envtl. L. 19 (2008); John U. Carlson & Alan E. Boles, *Contrary Views of the Law of the Colorado River: An Examination of Rivalries Between the Upper and Lower Basins*, 32 Rocky Mtn. Min. L. Inst. 21-1 (1986); David H. Getches, *Colorado River Governance: Sharing Federal Authority as an Incentive to Create a New Institution*, 68 U. Colo. L. Rev. 573 (1997); David H. Getches, *Competing Demands for the Colorado River*, 56 U. Colo. L. Rev. 413 (1985); Douglas L. Grant, *Collaborative Solutions to Colorado River Water Shortages: The Basin States' Proposal and Beyond*, 8 Nev. 984 (2008); David E. Lindgren, *The Colorado River: Are New Approaches Possible Now That the Reality of Overallocation Is Here?*, 28 Rocky Mtn. Min. L. Inst. 25-1 (1992); James S. Lochhead, *An Upper Basin Perspective on California's Claims to Water from the Colorado River, Part I: The Law of the River*, 4 U. Denv. Water L. Rev. 290 (2001); James S. Lochhead, *An Upper Basin Perspective on California's Claims to Water from the Colorado River Part II: The Development, Implementation and Collapse of California's Plan to Live within Its Basic Apportionment*, 6 U. Denv. Water L. Rev. 318 (2002-2003); Lawrence J. MacDonnell, *Arizona v. California Revisited*, 52 Nat. Resources J. 363 (2012); Charles J. Meyers, *The Colorado River*, 19 Stan. L. Rev. 1 (1966); Jason S. Robison and Lawrence J. MacDonnell, *Arizona v. California & the Colorado River Compact: Fifty Years Ago, Fifty Years Ahead*, 4 Ariz. J. Envtl. L. & Pol'y 130 (2013-2014); Jason A. Robison, *The Colorado River Revisited*, 88 U. Colo. L. Rev. 475 (2017); John B. Weldon, Jr. & Lisa M. McKnight, *Future Indian Water Settlements in Arizona: The Race to the Bottom of the Waterhole?* 49 Ariz. L. Rev. 441 (2007).

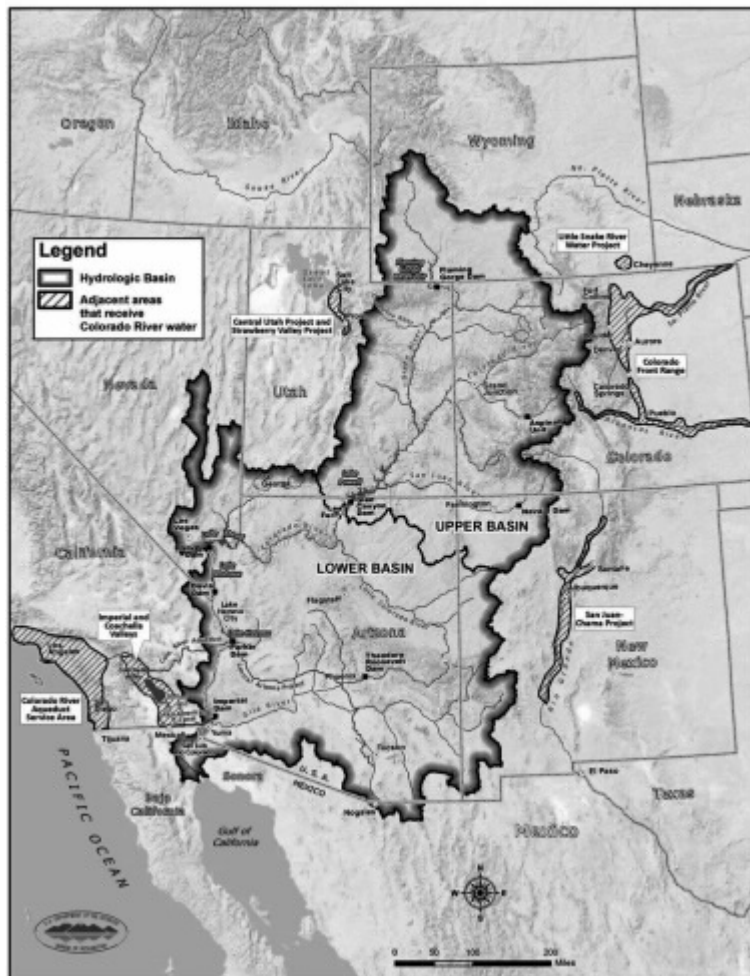
⁴ John W. Powell, *The Exploration of the Colorado River and its Canyons* (Dover Edition 1961), provides an unforgettable account of this journey, with its untold challenges and successes. Just a few of the iconic places named by Powell and his crew include Flaming Gorge, Gates of Lodore, Echo Park, Desolation Canyon, Labyrinth Canyon, Cataract Canyon, the Dirty Devil River, Glen Canyon (now with its reservoir named Lake Powell), and Marble Canyon.

fifth longest in the United States. *See* Figure 1. Despite its relatively modest water production, the Colorado River is by far the dominant river of the southwestern part of the United States and northwest Mexico. Most of its yield (90%) is generated in the mountainous upstream areas, primarily from the Colorado River basin above Grand Junction, the Gunnison, the Green, and the San Juan.■ Little water reaches the Colorado from tributaries below Lee Ferry, the dividing point between the Upper and Lower Colorado River basins.■

■ W. V. Ions, et al., *Water Resources of the Upper Colorado River Basin—Technical Report: Introduction and Summary*, U.S.G.S. Professional Paper 441-A (1965). Assuming annual precipitation of 15.88 inches across the basin, the Upper Colorado River Basin produces about 92 million acre-feet per year. *Id.* at 19. About 77 million acre-feet of that amount are lost to evapotranspiration. Based on this study, approximately 44 % of the Upper Basin’s total discharge at Lee Ferry comes from the Colorado, 37% from the Green, and 19% from the San Juan. *Id.* More recent analysis by the Bureau of Reclamation determined that 92% of the water available at Imperial Dam comes from above Lee Ferry, with the Green River contributing about 33 percent of the total natural flow, the Colorado River at Cisco, Utah about 42 percent, and the San Juan River about 13 percent based on long-term annual natural flows from 1906 to 2007. Bureau of Reclamation, *Colorado River Basin Water Supply and Demand Study, Technical Report B—Water Supply Assessment*, B-22 (2012). The Gila River Basin, primarily in Arizona, contains a drainage area of nearly 60,000 square miles. The water resources of this basin are now fully consumed before the river reaches the Colorado, but a USGS investigation in 1916 found discharges to the Colorado River in the calendar years 1904 were 226,290 acre-feet, in 1905 3,3664,400 acre-feet, and in 1906 5,454,360 acre-feet, substantial but highly variable. E.C. La Rue, *Colorado River and its Utilization*, Water-Supply Paper 395 (1916). A more recent analysis stated that the average annual discharge of the Gila River to the Colorado was 1.6 maf/year. Michael J. Cohen et al., *A Preliminary Water Balance for the Colorado River Delta 1992–1998*, 49 *Journal of Arid Environments* 35 (2001).

■ Lee Ferry represents the basin’s hydrologic, geographic, and political divide. It is the only place within hundreds of miles that the Colorado River can be accessed directly on both its east and west sides. As explained in Kevin G. Wheeler et al., *Water Resources Modeling of the Colorado River: Present and Future Strategies* 7, Center for Colorado River Studies, Utah State University (2020): “The dividing point, Lee Ferry, is precisely defined as ‘a point in the main stream of the Colorado River one mile below the mouth of the Paria River’ (Colorado River Compact, Article II(e). Lee Ferry is approximately 2 mi downstream from Lees Ferry, established in the late 1800s as a ferry crossing, and today serves as the launch point for river trips through the Grand Canyon. The Lees Ferry gaging station (USGS gage 09380000) is located upstream from the Paria River confluence and has been operated by the US Geological Survey since 1921 (references omitted).’ ” *Water Resource Modeling of the Colorado River: Present and Future Strategies*, White Paper No. 2, Center for Colorado River Studies, Utah State University (2019). Lee Ferry has a rich history that is recounted by David Owen, *Where the Water Goes* 80–83 (2017).

Figure 1
THE COLORADO RIVER BASIN



Source: U.S. Department of the Interior, Bureau of Reclamation.

Flying in an airplane over most any part of the Colorado Basin, one is struck by the rugged look of the landscape, from mountainous to incised canyons to desert. It is not easily inhabited and, in fact, there are no major cities along the Colorado River itself, though Las Vegas is close to the river.⁷ While irrigated agriculture is the predominant use of basin water, most cultivated lands using basin water are outside the basin.⁸ Even

⁷ The most populous city directly along the Colorado mainstem is Grand Junction, Colorado, a town of about 61,000 people. U.S. Census Bureau, FactFinder, available online at https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml?src=bkmk. Phoenix, Arizona is the largest city in the basin itself. Las Vegas is next. Several other major cities located outside the basin including Los Angeles, Salt Lake City, and Denver are substantially dependent on the use of basin water, however.

⁸ Bureau of Reclamation, Colorado River System Consumptive Uses and Losses Report, 2001–2005, Table C-6, Summary of Estimated Water Use by States and the Types of Use 2005.

today, many parts of the basin are remote. We like to visit but we don't necessarily want to stay. Yet, obviously many people do. Native Americans have populated the Colorado River Basin for many thousands of years, and continue to do so today.[■] Agriculture remains the primary economy in the basin, but recreation is now providing an important additional source of employment and population.[■] Mineral and energy development continue to be important in some areas. But perhaps the basin's most important product and export is water.

B. Basin Water Development.

Nowhere in the West is the work of the Bureau of Reclamation in developing water resources more evident than in the Colorado River Basin. Beginning with the Salt River Project (authorized in 1903) and the Yuma Project (authorized in 1904) in Arizona, the Uncompahgre Project (authorized in 1903) in Colorado, and the Strawberry Valley Project (authorized in 1905) in Utah, Reclamation took the lead in the construction of facilities to capture, store, and deliver water in the basin for out-of-stream uses.[■] Individual and collective efforts already had resulted in irrigation of lands, especially along the tributaries, even carrying water in ditches to lands outside the basin.[■] On the mainstem, private efforts built the original diversion structures for the Imperial and the Palo Verde Valleys in California, but floods wreaked havoc with these systems. When Reclamation built Hoover Dam in the 1930s on the mainstem Colorado River it was considered one of the great engineering feats of all time.[■] Installation of hydroelectric power generating facilities at Hoover and other Reclamation dams provided the means of paying most of the substantial costs of these projects. Water for the desert gardens of the Imperial and Coachella Valleys was secured by Reclamation's construction of the All-American Canal and Imperial Dam, completed in 1942. Over the next 40 years, Reclamation built several more storage dams on the mainstem, including Parker and Davis dams in the Lower Basin, and Glen Canyon Dam at the lower end of the Upper Basin, as well as Fontanelle and Flaming Gorge on the Green River, the three dams of the Aspinall Unit on the Gunnison, and Navajo Dam on the San Juan. *See* Figure 2. Initially, virtually all developed basin water went for irrigation uses. Construction of Parker Dam in the 1930s, creating Lake Havasu, enabled transport of basin water to rapidly growing coastal southern California through the Colorado River Aqueduct. By 1975 it could be said with confidence that "[t]he Colorado River is one of the most highly controlled rivers in the world. It is approaching that point when little usable

■ Colorado River, History, Indigenous Peoples, Wikipedia, https://en.wikipedia.org/wiki/Colorado_River#cite_note-CP-111.

■ *See, e.g.,* James F. Booker and Bonnie G. Colby, *Competing Water Uses in the Southwestern United States, Valuing Drought Damages*, 31 Water Resources Research 877 (1995).

■ A more comprehensive description of water development in the Colorado River Basin is provided in April R. Summitt, *Contested Waters: An Environmental History of the Colorado River* 11–24 (2013).

■ Irrigators constructed the Grand Ditch at the headwaters of the Colorado River in 1890 to carry water from the west side of the continental divide to lands along the Front Range of Colorado.

■ Marc Reisner, *Cadillac Desert: The American West and Its Disappearing Water* 106 (2d ed. 1987).

water, if any, will ever escape from the basin to the Gulf of California.”¹⁴ By the late 1950s it had been estimated that additional storage in the Colorado River Basin would result in a net loss of usable water over time because of the continuous losses of stored water to evaporation, yet construction continued.¹⁵

In the early 1990s the Bureau of Reclamation completed the largest project in the Colorado Basin, the Central Arizona Project (CAP), moving water upgradient from the mainstem hundreds of miles to Phoenix and Tucson. The last substantial water development project in the basin, the Central Utah Project, has been under construction for decades. Some units have been completed while others have been eliminated. Reclamation completed a substantially-modified Animas-La Plata Project in southwestern Colorado in 2009. Authorized in 2009, Reclamation is constructing the Navajo-Gallup Pipeline Project in western New Mexico to bring drinking water supplies to the Navajo and Jicarilla Apache reservations and the Town of Gallup.

Viewed from today’s perspective, the frenzy of development that occurred on the Colorado seems extraordinary. This passage from a 1946 Department of the Interior report to Congress entitled “The Colorado River: A Natural Menace Becomes a National Resource,” gives a sense of the motivation impelling development of the river:

Yesterday the Colorado River was a natural menace. Unharnessed it tore through deserts, flooded fields, and ravaged villages. It drained the water from the mountains and plains, rushed it through sun-baked thirsty lands, and dumped it into the Pacific Ocean—a treasure lost forever. Man was on the defensive. He sat helplessly by to watch the Colorado River waste itself, or attempted in vain to halt its destruction.

Today this mighty river is recognized as a national resource. It is a life giver, a power producer, a great constructive force. Although only partly harnessed by Boulder Dam and other ingenious structures, the Colorado River is doing a gigantic job. Its water is providing opportunities for many new homes and cities and turning the wheels of industry. Its destructive floods are being reduced. Its muddy waters are being cleared for irrigation and other uses.

¹⁴ U.S. Department of the Interior, Westwide Study Report on Critical Water Problems Facing the Eleven Western States 153 (1975).

¹⁵ Walter B. Langbein, U.S. Department of the Interior, Geological Survey, Water Yield and Reservoir Storage in the United States 5 (1959).

Figure 2
MAJOR DAMS OF THE COLORADO RIVER BASIN



Source: Quality of Water, Colorado River Basin Project Report No. 16 (1993).

Indeed, the extraordinary development of the water resources of the Colorado River Basin has supported equally extraordinary economic development in the basin and in those many areas that receive both water and electricity from the basin. As summarized in a major study of the basin completed in 2012,

the Colorado River and its tributaries provide water to nearly 40 million people for municipal use, supply water to irrigate nearly 5.5 million acres of land, and is the lifeblood for at least 22 federally recognized tribes . . . , 7 National Wildlife Refuges, 4 National Recreation Areas, and 11 National Parks. Hydropower facilities along the Colorado River provide more than 4,200 megawatts of electrical generating capacity, helping to meet the power needs of the West and offset the use of fossil fuels. The Colorado River is also vital to the United Mexican States . . . to meet both agricultural and municipal water needs.■

Viewed in historical context, federal development of the basin's water (and power) resources represents a textbook twentieth century model of using national resources to

■ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Executive Summary, at 3 (2012).

help promote regional growth and development. Now in the twenty-first century we are enjoying the benefits and struggling with the challenges resulting from this approach.

C. Water and Water Uses in the Basin.

Like all western rivers the flows of the Colorado can vary enormously from year to year. Observed flows between 1906 and 2014 at Lees Ferry gage ranged from a low of 5.44 million acre-feet to 24.19 million acre-feet, with a mean of 14.81 million acre-feet.¹⁷ The period of highest recorded flows occurred between 1906 and 1930; the two lowest periods of recorded flow occurred between 1955 and 1980 and 2000 and 2020.¹⁸ The reliability of the annual water supply is considerably enhanced by the existence of approximately 60 million acre-feet of storage in the Colorado River system reservoirs.¹⁹ Hydrological analyses associated with the Basin Water Supply and Demand study determined that 92 percent of the water at Imperial Dam, the last major diversion structure in the United States on the mainstem, originates above Lee Ferry.²⁰

Tree-ring studies revealed extended periods of below-average flows in the basin dating back to the 1100s.²¹ The prolonged drought in the basin that began in 2000 has prompted extensive studies to determine its causes, and the likely short-and long-term effects on basin hydrology. These studies have found that the ongoing drought is most likely the result of increasing temperatures and reduced precipitation, and that future reliable supplies of water are likely to decrease.²² According to the Basin Science

¹⁷ Information available online at Treeflow.org (last visited July 20, 2019). Reconstructed flows dating back to 1416 and to 1116 that estimate the flows that would have been at Lees gage absent human actions suggest similar mean annual flows (about 14.3 maf) with lows respectively of 3.96 maf and 2.56 maf and highs of 24.89 maf and 22.97 maf. *Id.*

¹⁸ Western Water Assessment, Colorado River Basin Climate and Hydrology State of the Science 61 (2020).

¹⁹ U.S. Department of the Interior, Quality of Water, Colorado River Basin Progress Report No. 16, 6 (1993).

²⁰ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Technical Report B—Water Supply Assessment, at B-22 (2012).

²¹ David M. Meko et al., Medieval Drought in the Upper Colorado River Basin, 34 Geophysical Research Letters L10705 (2007). As summarized in Western Water Assessment, Colorado River Basin Climate and Hydrology State of the Science 61 (2020), “[w]ith this much longer context—about 10 times longer than the observed record—the extended high-flow period from 1906–1930 appears to be quite unusual, with only two prior periods (late 1100s and early 1600s) that appear to be comparable. On the opposite extreme, there appear to be many extended low-flow periods with greater cumulative deficits than the 1955–1980 period, or the current 2000–2018 period.”

²² See, e.g., M Hoerling et al., *Causes for the Century-Long Decline in Colorado River Flow*, 32 J. Climate 81 (2019); P.C.D. Milly & K.A. Dunne, *Colorado River flow dwindles as warming-driven loss of reflective snow energizes evaporation*, 367 Science 1252 (2020); Bradley Udall & Jonathan Overpeck, *The twenty-first century Colorado River hot drought and implications for the future*, 53 Water Resources Research 2404 (2017).

report, “[s]ince 2000, the basin has experienced an extended dry period in which the average annual water supply has been 18% lower than the historical average.”[■]

Table 1 shows the estimated water depletions in the Colorado River Basin by source of depletion in 2005.[■] About 6.3 million acre-feet of water were fully consumed by irrigation use within the basin; out-of-basin exports for irrigation and municipal and industrial use depleted about 6.5 million acre-feet; municipal and industrial uses within the basin depleted about 1.7 million acre-feet; evaporation and channel losses accounted for about 1.9 million acre-feet of annual depletions. About 1.7 maf flowed to Mexico.

Table 2 shows depletions by use and by state in 2005. Arizona, California, and Nevada—the states of the Lower Basin—consumed about 9.3 million acre-feet of the 16.4 million acre-feet total. Uses in the Upper Basin states depleted about 3.6 million acre-feet.

Figure 3 shows the long-term water supply/demand balance in the basin as presented in Reclamation’s 2012 Basin Study.[■] Depletions now exceed reliable annual additions of water to the basin. The Basin Study projects shortfalls of about 3.2 million acre-feet per year by 2060.[■] Importantly, however, during the recent period of sustained drought, uses of basin water have declined.[■]

[■] Western Water Assessment, Colorado River Basin Climate and Hydrology State of the Science 7 (2020).

[■] Bureau of Reclamation, Colorado River System Consumptive Uses and Losses Report, 2001–2005.

[■] Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Executive Study, Figure 2 (2012).

[■] Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Executive Study, 9 (2012).

[■] Molly A. Maupin, et al., Estimates of Water Use and Trends in the Colorado River Basin, Southwestern United States, 1985–2010, at 9, U.S. Geological Survey, Scientific Investigations Report 2018–5049.

TABLE 1
WATER DEPLETIONS IN THE COLORADO RIVER BASIN (2005)

Type of use	(in millions of acre-feet)
Agriculture (within basin)	6.3
M & I (within basin)	1.7
Exports outside the basin (includes 1.7 to Mexico)	6.5
Reservoir evaporation and channel losses	1.9
Totals	16.4

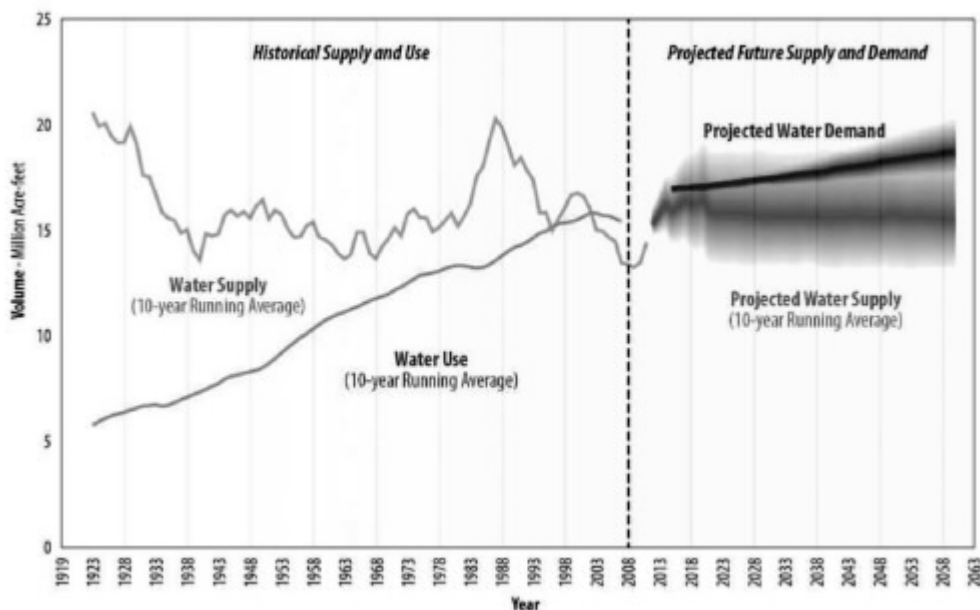
Source: Colorado River System Consumptive Uses and Losses Report, 2001–2005.

TABLE 2
SUMMARY OF ESTIMATED WATER USE BY STATES
AND THE TYPES OF USE, 2005
Estimated Beneficial Consumptive Uses and Losses (1,000 acre-feet)

State	Reservoir evaporation	Irrigated Agriculture	Municipal & Industrial	Export Outside System	Export Within System	Unmeasured Return Flow	Total
AZ	199.5	3,414.2	1,120.2	0.0	4.5	0.0	4,738.4
CA	0.0	388.9	3.5	3,980.0	0.0	0.0	4,372.4
CO	85.8	1,232.3	66.3	447.9	0.0	0.0	1,832.3
NV	11.0	67.1	310.7	0.0	(4/5)	0.0	384.3
NM	34.5	230.3	79.0	155.8	0.0	0.0	499.5
UT	82.8	671.6	83.6	169.7	0.0	0.0	1,007.8
WY	36.2	319.4	43.6	23.3	0.0	0.0	422.5
Other	1,442.7	0.0	0.0	1,724.8	0.0	0.0	3,167.5
Total	1,892.5	6,323.8	1,706.8	6,501.4	0.0	0.0	16,424.6

Source: Colorado River System Consumptive Uses and Losses Report, 2001–2005, Table C-6.

Figure 3
LONG-TERM WATER SUPPLY/DEMAND BALANCE IN
COLORADO RIVER BASIN



III. The Law of the River.

A. Overview.

The early development of the law of the Colorado River was, in many respects, the story of the basin states—often grudgingly—reaching agreements as a condition of federal support for development serving state water uses, with the Congress implementing the agreements and the U.S. Supreme Court sorting out various disputes surrounding those agreements and related legislation. It is a story that Norris Hundley, Jr. tells well in *Water and the West*,² and will only be summarized here. More recently, additions to the Law of the River have emerged out of difficult negotiations among the states, often prodded by the Department of the Interior, to address additional issues.

First a chronology of major events is set out and briefly described (*see* Table 3). Then the legal effects of these events are analyzed in terms of the effective priorities they established to use the Colorado River. Newer additions to the Law of the River, primarily concerned with environmental and water management concerns, are then discussed.

² Norris Hundley, Jr., *Water and the West: The Colorado River Compact and the Politics of Water in the American West* (1975).

TABLE 3
LAW OF THE RIVER CHRONOLOGY

Year	Event
1922	Colorado River Compact successfully negotiated by representatives of the seven basin states and the United States
1928	Congress passes the Boulder Canyon Project Act
1929	California passes the Limitation Act President Hoover proclaims the Compact in effect even without ratification by Arizona
1930	Construction of what becomes Hoover Dam begins. U.S. issues contracts for water deliveries and electric power Arizona files suit in U.S. Supreme Court challenging constitutionality of the Boulder Canyon Project Act and the Colorado River Compact
1931	Supreme Court rules against Arizona in <i>Arizona v. California I</i> (283 U.S. 439) Seven Party Agreement allocates California's share of Colorado River water
1935	Hoover Dam completed
1940	Boulder Canyon Project Adjustment Act
1944	Treaty with Mexico Arizona ratified Compact
1948	Upper Colorado River Basin Compact negotiated
1949	Compact ratified by states and approved by Congress
1952	Arizona brings action in U.S. Supreme Court to establish its Compact right
1956	Colorado River Storage Project Act passed
1963	Supreme Court decides <i>Arizona v. California</i> (373 U.S. 546)
1967	Colorado River squawfish (now pikeminnow) and humpback chub listed as endangered under the Endangered Species Act
1968	Congress passes Colorado River Basin Project Act
1970	DOI issues Operating Criteria pursuant to Colorado River Basin Project Act
1972	Minute 242 negotiated
1974	Colorado River Basin Salinity Control Act passed
1980	Bony-tail chub listed as endangered under the Endangered Species Act
1987	Upper Colorado River Endangered Fish Species Recovery Program established
1992	Grand Canyon Protection Act passed
1999	Interstate Water Banking Program for Lower Mainstem instituted
2001	Interim Surplus Guidelines promulgated
2003	Quantification Settlement Agreement finalized
2005	Lower Basin Multi-Species Habitat Conservation Plan adopted
2007	Interim Shortage Guidelines adopted
2012	Completion of Basin Water Study
2012	Minute 319 adopted
2014	Pilot System Conservation Program agreed to
2017	Minute 323 adopted
2019	Drought Contingency Plans finalized

B. Allocation and Development.

1. Colorado River Compact.

The successful negotiation of the Colorado River Compact[■] in 1922, the first such interstate compact devised for the purpose of allocation of water resources, resulted from the confluence of a number of different interests. One interest was that of Imperial Valley, California, developers seeking to obtain a more secure water supply for a thriving irrigation economy through construction of a canal located completely within the U.S. that would carry water from the Colorado River to the valley. Closely allied with this interest was the emerging desire of the Reclamation Service (now the Bureau of Reclamation) to show the potential of river basin development, featuring construction of a large dam or dams on the mainstem of the Colorado. The rapidly growing city of Los Angeles later joined forces in seeking federal support for a dam to generate cheap electricity. To get funding from Congress for such large-scale development directly benefiting only California would require at least the acquiescence, if not support, of the other basin states. Leaders in the Upper Basin (particularly Delph Carpenter of Colorado) wanted an interstate compact that would protect this slower growing region's claim to future development rights of Colorado River water before they would support such congressional funding.[■] In particular, they wanted the perpetual right to develop a specified share of the basin's water irrespective of when that development occurred.[■] The breakthrough in the negotiations leading to the Colorado River Compact turned on the legal division of the Colorado River into Upper and Lower Basins, divided at Lee Ferry near the Arizona-Utah border. In effect, the idea was to divide what was thought to be a conservative estimate of the annual average native flows of the river (15 million acre-feet) between the four Upper Division states—Colorado, New Mexico, Utah, and Wyoming—and the three Lower Division states—Arizona, California, and Nevada—with each receiving half.[■] Unfortunately, the hydrologic record upon which the apportionment was made reflected a period of unusually high flows. Negotiators believed they were allocating more than 17 million

[■] The Colorado River Compact was negotiated in 1922 under authority of the act of 19 August 1921, ch. 72, 42 Stat. 171. It was approved by Congress in § 13(a) of the Boulder Canyon Project Act of 1928, 45 Stat. 1064, 43 U.S.C. § 617l(a). It was proclaimed by President Hoover on 25 June 1929, 46 Stat. 3000. See Ray L. Wilbur & Northcutt Ely, *The Hoover Dam Documents*, H.R. Doc. No. 717, 80th Cong., 2d Sess. 22 (Washington, D.C., 1948). See also *supra* Treatise ch. 46.

[■] For a biography of Carpenter, see Daniel Tyler, *Silver Fox of the Rockies Delphus E. Carpenter and Western Water Compacts* (2003).

[■] In an original action before the U.S. Supreme Court involving a dispute between Colorado and Wyoming respecting uses of the Laramie River, the Court had followed the rule of prior appropriation on an interstate basis. *Wyoming v. Colorado*, 259 U.S. 419 (1922). Carpenter feared application of this rule to the Colorado River would place the slower developing upper states at a great disadvantage.

[■] The Compact defines “Upper Basin” as the drainage area of the Colorado River system above Lee Ferry as well as those areas served with water from this area located in the states of Arizona, Colorado, New Mexico, Utah, and Wyoming. The “Lower Basin” is the comparable area in the states of Arizona, California, Nevada, and Utah below Lee Ferry. Thus, the term “basin” refers to a geographical area while the term “division” refers to the states predominantly or totally located within that basin.

acre-feet of water—perhaps as much as 20.[■] Thus, in Article III, the Compact allocates the “exclusive beneficial consumptive use” of 7.5 million acre-feet a year each to the Lower and Upper Basins. It then allocates an additional million acre-feet for the consumptive use of the Lower Basin, and further provides for allocation of “surplus” waters of the river, if any, to the use of Mexico under any agreements subsequently to be negotiated with that country.

The operative provision of Article III is that which says the Upper Division states may “not cause the flow of the river at Lee Ferry to be depleted below an aggregate of 75,000,000 acre-feet for any period of ten consecutive years reckoned in continuing progressive series beginning with the first day of October next succeeding the ratification of this compact.”[■] This article further limits Upper Division states from withholding water not being applied to domestic and agricultural uses in the Upper Basin, and Lower Division states from requiring water that cannot be placed to beneficial use.

The Compact creates a hierarchy of uses of Colorado River water with urban and agricultural consumptive uses first, then hydroelectric power generation, and finally navigation. Left unimpaired by the Compact are any claims of Indian tribes as well as those holding “present-perfected rights” to the use of Colorado River water at the time of the Compact.[■]

2. Boulder Canyon Project Act.

With the Compact in hand, Imperial Valley interests went back to Congress seeking funding to build a canal taking water from the Colorado River to the valley that would be within the borders of the United States—an “All-American Canal.” The Reclamation Service pressed its plans for construction of a large onstream dam that would both provide flood control in the lower river and serve as a major storage facility ensuring deliveries of irrigation water when needed. Generation and sale of hydroelectric power would be the means by which much of the cost of the facility would be paid. Arizona continued to object vigorously and held up federal support for a few years. Finally, Congress conditioned its support for these projects on ratification of the Compact by only six of the seven basin states, including California, which would have to agree to limit its annual consumptive use of Colorado River water to no more than 4.4 million acre-feet of the Lower Basin apportionment, plus not more than one-half of any of the surplus waters that might be available but unallocated under the Compact.[■] President

■ Norris Hundley, Jr., *Water and the West: The Colorado River Compact and the Politics of Water in the American West* 184 (1975). For a recent perspective on the misuse of available hydrologic information, see Kuhn & Fleck, *Science Be Dammed: How Ignoring Inconvenient Science Drained the Colorado River* 35-56 (2019).

■ Colorado River Compact, Art. III(d).

■ A good analysis of the legal uncertainties associated with the meaning of the Colorado River Compact is provided in Charles J. Meyers, *The Colorado River*, 19 *Stanford L. Rev.* 1 (1966-67). See also Jason A. Robison, *The Colorado River Revisited*, 88 *U. Colo. L. Rev.* 475, 513–517 (2017).

■ Boulder Canyon Project Act of 1928, Pub. L. No. 70-642, 45 Stat. 1057 (codified at 43 U.S.C. § 617 (1988)).

Herbert Hoover who, as Secretary of Commerce in 1922 had represented the United States in the Colorado River Compact negotiations, declared the Boulder Canyon Project Act in effect in 1929. California had passed the required Limitation Act,[■] and five other states had ratified the Compact. Arizona staunchly withheld its agreement to the terms of the Compact. Shortly thereafter, the Reclamation Service began work on what would become Hoover Dam at a site in Black Canyon, and entered into contract arrangements for the supply of hydroelectric power and for the delivery of water from Lake Mead to users in California.

In 1931, California interests negotiated the Seven Party Agreement by which the California share of Colorado River water was fully allocated together with water that might be available beyond the basic allocation of 4.4 million acre-feet. The Secretary of the Interior, who has responsibility for allocating water from the project by contract, deferred to the quantities in the Seven Party Agreement when awarding contracts.[■]

3. Mexican Water Treaty.

The 1944 Treaty with Mexico addressed water allocation issues on both the Rio Grande and the Colorado River.[■] In the treaty the United States agreed to deliver 1.5 million acre-feet of Colorado River water annually, with the possibility of an additional 200,000 acre-feet.[■] In the event of an extraordinary drought or a serious accident damaging irrigation facilities in the United States, water allotted to Mexico may be reduced in the same proportion as consumptive use in the United States is reduced. The treaty also expanded the responsibilities of the existing International Boundary Commission to include water (renaming it the International Boundary and Water Commission), and charged it with conducting investigations of flood control, water resources conservation and sanitation, as well as with prevention of pollution and other related matters in the area around the international boundary between the United States and Mexico. Furthermore, the Secretary of State is authorized to construct and maintain fences, sewer systems and water systems on and crossing the international border.

■ 1929 Calif. Stat. (Mar. 4) chs. 15–16, pp. 37–39.

■ This agreement provided agricultural water users (Palo Verde Irrigation District, the Yuma Project in California, the Imperial Irrigation District, and the Coachella Valley Water District) the highest priority to 3,850,000 acre-feet of the California apportionment. The Metropolitan Water District of Southern California (MWD) was given the next two priorities for up to 1,212,000 acre-feet. California tribes were not involved in this agreement. For modifications to these arrangements, see *infra* § III.C.4.

■ 59 Stat. 1219, art. 10(b), T.S. No. 994, 3 U.N.T.S. 313 (1944). See *generally supra* Treatise § 51.03.

■ An interesting footnote to this agreement is the role played by Senator Thomas Connally of Texas, who apparently managed to persuade the State Department to give Mexico 1.5 maf/year from the Colorado River in return for Mexico foregoing its claims to use of the Rio Grande in Texas. 114 Congressional Record 13437, May 15, 1968 (Secretary Stewart Udall). He had help from his fellow Texan, Lawrence Lawson, American Commissioner for the International Boundary Commission, whose testimony to Congress inflating flows on the Colorado River has been called “outright fraud.” Kuhn & Fleck, *Science Be Dammed: How Ignoring Inconvenient Science Drained the Colorado River* 124 (2019). Most Colorado River Basin interests had expected Mexico would get much less.

Refinements to the treaty are added intermittently in the form of “minutes.” Several are discussed below.■

4. Upper Colorado River Basin Compact.

In 1946, the Bureau of Reclamation completed an evaluation of water storage sites in the Upper Basin.■ The report emphasized the need for the Upper Division states to clarify their respective shares of the Upper Basin apportionment so that water storage projects could be planned and built.■ The four Upper Division states then negotiated a compact that was ratified in 1949.■ Reflecting the uncertainty in the total apportionment of water that might actually be available to the Upper Division states, the Compact allocated shares in percentage terms: 51.75 percent to Colorado, 11.25 percent to New Mexico, 23 percent to Utah, and 14 percent to Wyoming. Arizona, with a small part of its land in the Upper Basin, also received an entitlement of 50,000 acre-feet per year.■ The Compact established an Upper Colorado River Commission with one representative each from the four states and the federal government, and directed the Commission to oversee implementation of some of its provisions.■ The Compact also established a procedure for making curtailments of existing water uses in the Upper Division states if needed to meet the terms of the Colorado River Compact.■

5. *Arizona v. California.*

In 1952, Arizona filed an original action in the U.S. Supreme Court seeking to establish its share of the Lower Basin apportionment judicially.■ The Court in 1963 determined instead that Congress had already effected an allocation of Lower Basin

■ See *infra* § III.B.11 (Minutes 319 and 323).

■ Bureau of Reclamation, *The Colorado River: A Comprehensive Report on the Development of the Water Resources of the Colorado River Basin for Irrigation, Power Production, and Other Beneficial Uses in Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming* (1946).

■ Norris Hundley, Jr., *Water and the West: The Colorado River Compact and the Politics of Water in the American West* 300 (1975).

■ Upper Colorado River Basin Compact, available online at <https://www.usbr.gov/lc/region/g1000/pdfiles/ucbsnact.pdf>.

■ Upper Colorado River Basin Compact, Art. III, available online at <https://www.usbr.gov/lc/region/g1000/pdfiles/ucbsnact.pdf>.

■ Upper Colorado River Basin Compact, Art. VIII, available online at <https://www.usbr.gov/lc/region/g1000/pdfiles/ucbsnact.pdf>.

■ Upper Colorado River Basin Compact, Art. III, available online at <https://www.usbr.gov/lc/region/g1000/pdfiles/ucbsnact.pdf>.

■ This was Arizona’s fourth attempt to get relief from the Court. In its previous efforts the U.S. Supreme Court had ruled against Arizona. *Arizona v. California*, 283 U.S. 423 (1931) (the Boulder Canyon Project Act represented a “valid exercise of Congressional power” and in no way abridged Arizona’s rights); *Arizona v. California*, 292 U.S. 341 (1934) (Arizona’s plea to certify oral testimony on the meaning of the Colorado River Compact rejected as being not “relevant” because Arizona had not ratified the Compact); *Arizona v. California*, 298 U.S. 558 (1936) (Arizona’s request to determine its “equitable share of the water” was not a “justiciable controversy” because there were still millions of acre-feet of water flowing unused in the Colorado River).

water in the Boulder Canyon Project Act of 1928.[■] The Act had authorized the Lower Division states to enter into an agreement respecting the 7.5 million acre-feet apportioned to the Lower Basin under the 1922 Compact under a formula giving California 4.4 million acre-feet, Arizona 2.8 million acre-feet, and Nevada 300,000 acre-feet. No compact was negotiated, but the Court nevertheless determined Congress had exercised its constitutional authority to allocate water of the Colorado River.[■] Importantly, the Court redefined this 7.5 million acre-foot apportionment from basin water to mainstem water. The decision accepted Arizona's claim, based on the Boulder Canyon Project Act, that Congress gave it full use of the Gila River system, in addition to the 2.8 million acre-feet, though it did not address whether this tributary water was outside the Lower Basin's Compact apportionment. The Court also recognized rights of Indian tribes living within the Colorado River Basin to water necessary to effectuate the purposes of the five Lower Basin mainstem reservations.[■] It adopted a standard of "practicably irrigable acreage" as the measure of the tribes' water rights.[■] Recognizing the dates of the establishment of the reservations as the effective priority dates of the rights, the Court indicated that the water to satisfy these rights would come out of the individual apportionments for each state in which a reservation is located.[■]

The Court implemented its decision with a Decree in 1964.[■] The Decree firmly places the Secretary of the Interior in the position of watermaster for the mainstem Colorado River below Lee Ferry, and provides specific directions, now modified, for operations of federal facilities and deliveries of water.[■] The Decree required all users of mainstem water to have contracts with the Secretary.

The effect of these Supreme Court actions was to substantially federalize the Colorado River below Lee Ferry.[■] The Court seemed to be reacting both to the

■ See generally *supra* Treatise ch. 47.

■ *Arizona v. California*, 373 U.S. 546, 579 (1963). Until this decision, apportionments of waters of interstate rivers had been made either by interstate compacts or by judicial action of the U.S. Supreme Court under principles of equitable apportionment. For a critique of this decision, see Lawrence J. MacDonnell, *Arizona v. California Revisited*, 52 *Natural Resources J.* 363 (2012).

■ See *infra* § IV.B.

■ *Arizona v. California*, 373 U.S. 546, 600 (1963).

■ *Arizona v. California*, 373 U.S. 546, 601 (1963).

■ *Arizona v. California*, 376 U.S. 340 (1964).

■ Directions varied according to water availability. If there is mainstem water available surplus to the basic 7.5 million acre-foot apportionment, the Secretary is authorized to make 50% of such water available to California, 46% to Arizona, and 4% to Nevada. If less than 7.5 million acre-feet is available, present perfected rights are to be satisfied first according to priority without regard for state lines. The remainder is to be provided to contract holders but in no event are California users, including those with present perfected rights, to receive more than 4.4 million acre-feet. *Arizona v. California*, 376 U.S. 340, 346 (1964). This is an important limitation because California users hold contracts for the delivery of about 5.3 million acre-feet, contracts that were issued in the 1930s to enable delivery of Lower Basin water not used by Arizona at that time. These provisions have been modified by subsequent actions of the Secretary of the Interior establishing "interim" guidelines. See *infra* § III.B.10.

■ For example, the 1964 Decree includes in its definitions "water controlled by the United States,"

inability of the Lower Division states to resolve their differences and to the extraordinary investment of federal money that had been made in this part of the river. It not only recognized tribal reserved rights but quantified them on the basis of a standard that allocated nearly a million acre-feet of water to five reservations. The Court enlarged the reserved rights doctrine to include other federal reservations of land. Without discussion, the Court directed that these allocations come out of the apportionments of the state in which they are located. With the exception of present perfected rights, it expressly placed the power to allocate this source of water in the hands of the Secretary—making it clear that the usual deference to state water law for federal Reclamation projects did not apply. It did away with state lines with respect to serving the priorities of present perfected rights. While expressing deference to the 1922 Compact, the Court in fact decided that the Boulder Canyon Project Act modified the Compact in some respects and interpreted Compact provisions in ways that may well have been contrary to the intention of the drafters.■

6. Colorado River Storage Project Act.

With allocations of basin water to Upper Division states addressed by the 1948 Compact, Congress moved ahead with the Bureau of Reclamation's plan for large-scale river basin development in the Colorado River Storage Project Act of 1956.■ Reclamation's concept was to build several large mainstem dams in the Upper Basin allowing for regulation and storage of water, primarily intended to assure full delivery of water to the Lower Basin, but also able to generate hydroelectric power. The most significant of these facilities was Glen Canyon Dam, but the Act also authorized Navajo Dam on the San Juan River in New Mexico, Flaming Gorge Dam on the Green River in Utah near the Wyoming border, and the three dams of the Curecanti (now Aspinall) Unit on the Gunnison River in Colorado. In addition, the Act authorized construction of 11 "participating" projects intended to enable consumptive use of Upper Basin water.■ The Act created an Upper Colorado River Basin Fund with revenues from operations of these facilities (especially from sales of hydroelectric power) to be available through the fund to reimburse much of the costs of the facilities.

7. Colorado River Basin Project Act.

The next step in federally-funded development of Colorado River Basin water came in the Colorado River Basin Project Act of 1968.■ In the now familiar pattern of incorporating the pieces of a package that would satisfy all the basin states, the

which is "water in Lake Mead, Lake Mohave, Lake Havasu and all other water in the mainstream below Lee Ferry and within the United States." *Arizona v. California*, 376 U.S. 340 (1964).

■ Examples include the effective disregard of the one million acre-foot allocation in Article III(b) of the Compact, and the apparent determination that Arizona and Nevada were free to deplete the River's tributaries without regard to the Compact.

■ Ch. 203, Pub. L. No. 285, 70 Stat. 105, 43 U.S.C. § 620.

■ Other legislation added another six projects, two of which subsequently were deauthorized. The 1968 Colorado River Basin Project Act of 1968, Pub. L. No. 90-537, 82 Stat. 885, added five more projects, two of which were subsequently found to be infeasible.

■ Colorado River Basin Project Act of 1968, Pub. L. No. 90-537, 82 Stat. 885, 43 U.S.C. § 1501.

Colorado River Basin Project Act finally authorized Arizona's quest for a project that would carry water up out of the mainstem of the Colorado River hundreds of miles into the population heartland of the state, while simultaneously amending the Colorado River Storage Project Act to add 5 additional projects intended to facilitate consumptive use of water in the Upper Basin. The Act also promised to take the onus of the Mexico Treaty delivery obligation off the states by providing for "investigations" into ways to "augment" the basin's water supply—essentially to import water from other sources.■

It was not until 1944 that Arizona, desperate for federal assistance in developing its share of river water, conceded that it would ratify the 1922 Compact. Although this removed a technical barrier to federal assistance in building a Central Arizona Project (CAP), it did not end the political opposition to the project. Arizona had long objected, albeit unsuccessfully, to California's development, and California reciprocated. To get California's support for the 1968 bill, Arizona had to agree to subordinate its CAP water supply to the 4.4 million acre-feet to which California was entitled. New Mexico got to consumptively use 18,000 acre-feet of water from the Gila River before it flows into Arizona.■ The 1968 Act established a Lower Colorado River Basin Development Fund. Revenues generated from operation of CAP facilities (and from the Boulder Canyon and Parker-Davis Projects once the original costs of the project are repaid) are to be paid into the Fund until completion of CAP repayment requirements.

The Act also set out guidelines for the Secretary to follow in establishing long-range operating criteria for Glen Canyon (and other CRBP regulation dams) and for Hoover. The filling of Lake Powell behind Glen Canyon Dam during the 1960s prompted questions about how the Upper Basin regulation dams would be operated. Congress specified that releases from Glen Canyon would be made first to supply the Upper Basin's share of the "deficiency," if any, required to meet delivery obligations to Mexico,■ and then to meet the Compact obligation of not reducing flows to the Lower Basin below 75 million acre-feet in consecutive 10-year periods. Beyond these basic requirements, Congress directed the Secretary to manage storage in the regulating dams to balance potential additional downstream deliveries against the risks imposed on existing consumptive uses in the Upper Basin.■

■ Indeed, in Section 201 the Act directed the Secretary of the Interior to conduct such investigations for the purpose of developing a plan "to meet the future water needs of the Western United States." The resulting study, *Critical Water Problems Facing the Eleven Western States* 171 (1975), concluded that "[i]mportation of water to the Colorado River from other basins in the seven Basin States does not appear practicable."

■ In the 2004 Arizona Water Settlements Act, this amount was reduced to 14,000 acre-feet.

■ The 1922 Compact envisioned this water would come from "surplus" supplies available beyond the basic allocation to the basin states of 15 million acre-feet plus an additional 1 million acre-feet to the Lower Basin. By 1968 it had long been clear that there was no such surplus water.

■ Releases of additional water are not to be made if storage in Powell is less than storage in Mead. However, the Secretary is to maintain storage in the two reservoirs at essentially equal amounts. In any case unplanned spills from Powell are to be avoided. These provisions have been modified by the interim guidelines. See *infra* § III.B.10.

8. Interstate Water Banking Program.

Interest by Nevada in storing some of its unneeded apportionment in Arizona's water bank led to the promulgation of regulations in 1999 making such transactions possible in the Lower Basin.[■] These regulations authorize the Secretary of the Interior to enter into Storage and Interstate Release Agreements allowing Lower Division states to store water off-stream, develop intentionally created unused apportionment in a future year, and make this water available for release for use in another state.[■] In 2002, the states and the Bureau of Reclamation established a template for a storage and interstate release agreement.[■] As of year-end 2018, more than 900,000 acre-feet of water had been stored in Arizona and California for the benefit of the Southern Nevada Water Authority.[■]

9. Quantification Settlement Agreement.

In 1922, water consumption in the Upper and Lower Basins was roughly the same: 2.2 million acre-feet in the Upper and 2.5 million acre-feet in the Lower.[■] By 1955, consumption from the Colorado in the Lower Basin had increased to 5.5 million acre-feet, with California consuming all but 1 million of that total. By 1990, the Lower Basin was consuming more than its basic 7.5-million acre-foot apportionment—up to 8.4 million acre-feet by 2001 (not counting reservoir evaporation, transit losses, and unconsumed flows provided to make headgate deliveries), with California accounting for over 5.2 million acre-feet, Arizona 2.8 million acre-feet, and Nevada 315,000 acre-feet. Thus, California was 800,000 acre-feet over its basic allocation, while Arizona and Nevada were taking their entire shares.

Some Lower Basin users facing shortages in the 1980s explored transferring water from the Upper Basin, but met determined resistance from the State of Colorado.[■] Attention then turned to ways to meet growing needs by reallocation of water within the Lower Basin. Most prominently, San Diego began negotiations in 1994 seeking to acquire water from California's largest user—the Imperial Irrigation District.

Simultaneously, the Upper Division states began applying pressure on California to bring its uses down to its basic allocation of 4.4 million acre-feet. California could only continue to use water in addition to its basic 4.4 million acre-foot allocation if the Secretary declared a surplus. Representatives of all seven basin states and the Interior Department worked more or less collaboratively over a decade to develop rules (Interim Surplus Guidelines) governing such surplus declarations. Interior adopted the guide-

■ 43 C.F.R. Part 414.

■ 43 C.F.R. § 414.1.

■ <https://www.usbr.gov/lc/region/g4000/contracts/SIRAfina.pdf>.

■ Bureau of Reclamation, Colorado River Accounting and Water Use Report: Arizona, California, and Nevada, May 2019, Table 12 at 37.

■ Bureau of Reclamation, available online at <http://www.usbr.gov/lc/region/g4000/uses.html>.

■ See James S. Lochhead, *An Upper Basin Perspective on California's Claims to Water from the Colorado River, Part I: The Law of the River*, 4 U. Denv. Water L. Rev. 290 (2001).

lines in late December 2000, and implementing rules in early January 2001.[■] In the end, California appeared to get an additional 15 years to reduce its uses to 4.4 million acre-feet. The Interim Surplus Guidelines tied the Secretary's determination of surplus water to specified water elevations in Lake Mead. In place of the apportionments established in *Arizona v. California*, surplus water (if any) is to go primarily to urban uses in California, Nevada, and Arizona. The Guidelines also provided that they would be suspended if agricultural water uses from the Colorado River in California were not reduced in accordance with a series of "benchmarks" over the 15-year period.

When the first benchmark for determining water allocations among the California agricultural water users passed in 2002 with no agreement, the Secretary of the Interior suspended the guidelines, determined there was no surplus water, and reduced deliveries to California users.[■] Simultaneously, the Secretary determined that the Imperial Irrigation District was wasting 300,000 acre-feet of water, a determination that would remove this water from IID's control and use. In October 2003, the parties finalized the Quantification Settlement Agreement.[■] IID's rights within the basic entitlement are quantified as 3.1 million acre-feet, while Coachella's share is set at 330,000 acre-feet. Pursuant to a series of individual agreements involving IID, Coachella, MWD, and San Diego, up to 511,200 acre-feet of IID's water will shift to urban uses over a 75-year period based on conservation actions. In addition, MWD can divert and use any water not used by the Palo Verde Irrigation District under its rights to use up to 420,000 acre-feet. Considerable progress has been made in making irrigation water savings in the Imperial Valley to enable shift of the use of this water to urban users.[■]

10. Interim Shortage Guidelines.

Continuation of severe drought conditions during the first five years of the 2000s made clear that things had changed. Instead of worrying about how to allocate surpluses, the basin needed to come to terms with how to address potential shortages. Several parts of the Law of the River had acknowledged the possibility of shortages, but no provision had been made for how to allocate those shortages, or how to manage Lakes Powell and Mead in the event of continuing low water storage levels.[■] Early

[■] Colorado River Interim Surplus Guidelines, 66 Fed. Reg. 7772 (Jan. 25, 2001).

[■] This story is relayed in John Fleck, *Water is for Fighting* (2016). See also James S. Lochhead, *California's New Colorado River Diet: What Does it Mean for Colorado*, *Headwaters* 6–10 (Winter 2004).

[■] The Quantification Settlement Agreement is actually three separate agreements—one among the Southern California Agencies, one between the agencies and the State of California, and one between the Secretary of the Interior and the agencies. Implementation of the agreement is made through what is called the Colorado River Water Delivery Agreement, dated October 10, 2003, and published in the Federal Register at 69 Fed. Reg. 12202 (March 15, 2004).

[■] See, e.g., Imperial Irrigation District, Quantification Settlement Agreement, 2016 Implementation Report, available online at <https://www.iid.com/home/showdocument?id=14713>.

[■] The 1964 Decree in *Arizona v. California* made clear that the Secretary of the Interior had authority to determine how to allocate water to users in the Lower Basin under shortage conditions. *Arizona v. California*, 376 U.S. 340, 341, at II(B)(3) (1964). The Colorado River Basin Project Act of 1968, Pub. L.

signs were that the states were going to fight each other about how to address shortages, but calmer heads prevailed. In 2005, Secretary of the Interior Gale Norton initiated a public process to produce new rules and operating criteria for a limited period of time that would help Interior manage its dams and make its deliveries in the Lower Basin under low water conditions not previously encountered. Out of this process, agreement was reached among the seven basin states and Interior for adoption of “Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead.”⁷⁹ As summarized by Professor Grant, the guidelines have four primary components: “(1) coordinated operation of Lake Powell and Lake Mead, (2) Lower Basin shortage guidelines, (3) modification and extension interim surplus guidelines adopted in 2001, and (4) creation and delivery of intentionally created surplus.”⁸⁰

Storage and release of water from Lake Powell had been governed by Section 602 of the Colorado River Basin Project Act and the Long-Range Operating Criteria. In general, Reclamation had operated releases to ensure that a minimum of 8.23 maf of water passed each year.⁸¹ In fact, during the 1980s and the 1990s, Reclamation had released substantially more than this quantity most years.⁸² In the face of rapidly dropping storage elevation levels in Lake Powell, the Interim Guidelines establish a scheme under which releases from Glen Canyon Dam are tied to storage elevations in both Lake Powell and Lake Mead.⁸³ So-called equalization releases are to be made

No. 90-537, 82 Stat. 88, provided some additional guidance to the Secretary in Section 301(b). In addition, in Section 602 (b), it directed the Secretary to develop criteria for the operation of the Colorado River dams. The resulting Long Range Operating Criteria, promulgated in 1970, simply referred back to the *Arizona v. California* Decree respecting operations under shortage conditions. Criteria for Coordinated Long-Range Operation of Colorado River Reservoirs Pursuant to the Colorado River Basin Project Act of September 30, 1968, Section III(3) (Pub. L. No. 90-537), June 8, 1970.

⁷⁹ Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead, December 2007. A good summary is provided in Douglas L. Grant, *Collaborative Solutions to Colorado River Water Shortages: The Basin States Proposal and Beyond*, 8 Nev. L. Rev. 964 (2008).

⁸⁰ Douglas L. Grant, *Collaborative Solutions to Colorado River Water Shortages: The Basin States Proposal and Beyond*, 8 Nev. L. Rev. 964, 966 (2008).

⁸¹ The basis for this operation was an assumption that the Upper Basin shared the delivery obligation to Mexico with the Lower Basin, thus requiring a release of 750,000 acre-feet annually, as well as the obligation to not cause deliveries of water to the Lower Basin to drop below 7.5 maf in consecutive 10-year periods, requiring annual flows of at least 7.5 maf. This total of 8.5 maf is then reduced to account for an assumed 20,000 acre-feet entering the Colorado River from the Paria just below the gauge at Lee Ferry. Section 602(a)(3) of the Colorado River Basin Project Act of 1968, Pub. L. No. 90-537, 82 Stat. 88, further authorized storage of water in Powell as necessary to enable the Upper Basin to ultimately consumptively use up to its 7.5 maf/yr apportionment so long as the releases met obligations to Mexico and the Lower Basin.

⁸² Average annual releases during the 1980s equaled 12.8 maf; releases during the 1990s averaged 10.1 maf. <http://www.riversimulator.org/Resources/Graphs/AnnualReleaseGlenCanyonDam.pdf>.

⁸³ Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead, Section 6. Coordinated Operation of Lake Powell and Lake Mead During the Interim Period, 49-53, December 2007. “The objective of the operation of Lake

when storage levels in Powell are at specified high water levels.■ The guidelines also establish three release schedules at lower levels of Lake Powell storage that call for “balancing.”■

Guidelines governing reductions of deliveries under defined shortage conditions if the elevation of Lake Mead drops to 1075 feet or less on January 1 were established.■ The Interim Surplus Guidelines, adopted in 2001, are continued in a slightly modified form.■

Perhaps the most innovative feature in the Interim Guidelines was the authorization of Intentionally Created Surplus (ICS) in the Lower Basin.■ Conceptually, ICS water is water that remains available for storage and future use instead of being consumed because of conservation or efficiency actions or water that has been imported into the system. There are four categories: Extraordinary Conservation ICS; Tributary Conservation ICS; System Efficiency ICS; and Imported ICS.■ At year-end 2018, more than

Powell and Lake Mead as described herein is to avoid curtailment of uses in the Upper Basin, minimize shortages in the Lower Basin and not adversely affect the yield for development available in the Upper Basin.” *Id.* at 49. Three “tiers” are created: the Upper Elevation Balancing Tier, the Mid-Elevation Release Tier, and the Low Elevation Balancing Tier. Reclamation’s August 24-Month Study is used to determine the following water year’s expected lake elevation based on the project elevation on January 1 and thus the release quantity. Provision is made for some adjustments if appropriate based on the April-24 Month Study.

■ Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead, Section 6. Coordinated Operation of Lake Powell and Lake Mead During the Interim Period, 49 December 2007. The elevation level for equalization increases annually from 3636 to 3666 feet between 2008 and 2026. *Id.* at 51.

■ A useful summary is provided at <https://www.usbr.gov/uc/rm/crsp/gc/Eq-IntGuide/Eq-IntGuidelines-Fact.pdf>.

■ Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead, Section 6. Coordinated Operation of Lake Powell and Lake Mead During the Interim Period, 36-37, December 2007. The Interim Guidelines provided that a shortage occurs when Lake Mead storage reaches or is projected to reach 1075 feet above sea level or less on January 1. At storage levels between 1075 and 1050, total deliveries are reduced to 7.167 maf, with 2.48 maf going to Arizona, 287,000 af to Nevada, and 4.4 maf to California. At storage levels between 1050 and 1025 feet on January 1, total deliveries are reduced to 7.083 maf, with Arizona receiving 2.4 maf, Nevada receiving 283,000 af, and California receiving 4.4 maf. At storage levels below 1025 feet on January 1, total deliveries are 7.0 maf, with 2.32 maf to Arizona, Nevada 280,000 af, and California 4.4 maf. These provisions have been modified by the Lower Basin Drought Contingency Plan, see *infra* § III.B.12, Pilot System Conservation Program and Drought Contingency Plans.

■ Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead, Section 6. Coordinated Operation of Lake Powell and Lake Mead During the Interim Period, 34-36, December 2007. Douglas L. Grant, *Collaborative Solutions to Colorado River Water Shortages: The Basin States Proposal and Beyond*, 8 Nev. L. Rev. 964, 973-74 (2008), provides useful context.

■ Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead, Section 6. Coordinated Operation of Lake Powell and Lake Mead During the Interim Period, 38-43, December 2007.

■ Extraordinary Conservation ICS water results from temporarily fallowing irrigated lands. Tributary ICS water comes from the purchase and retirement of valid water rights on tributaries to the Colorado River. Efficiency ICS water is made available by improvements that result in more water availability in the

1.7 maf of ICS water was stored in Lake Mead.■ The water was credited to the accounts of the Central Arizona Water Conservancy District, the Metropolitan Water District, the Imperial Irrigation District, and the Southern Nevada Water Authority. The water was made available using a variety of mechanisms representing one of the four ICS categories.■

11. Minutes 319 and 323.

In 2012, the United States and Mexico added Minute 319 to the 1944 Treaty with Mexico.■ The Minute represented an important step towards further integrating Mexico into the management and decision-making system governing the Colorado River. Mexico agreed to share shortages when the storage elevation levels in Lake Mead dropped below 1075 feet.■ In return, Mexico gained the continued ability to store water in Lake Mead while earthquake-damaged irrigation infrastructure in Mexico was being repaired, as well as the ability to store Intentionally Created Mexican Allocation water during the five-year period of the interim agreement.■ In addition, Minute 319 established the framework governing the delivery of a “pulse” flow of water below Morelos Dam into the Colorado River Delta.■ On March 23, 2014, the

Colorado River. Beneficiaries provide the funding necessary for the Interior Department to implement system efficiency projects. Imported ICS water must come from sources outside the Colorado River Basin.

■ Bureau of Reclamation, Colorado River Accounting and Water Use Report: Arizona, California, and Nevada, May 2019, Table 22, at 52.

■ See Bureau of Reclamation, Colorado River Accounting and Water Use Report: Arizona, California, and Nevada, May 2019, Table 22, at 52–53, footnotes.

■ Minute No. 319, November 12, 2012, available online at https://www.ibwc.gov/Files/Minutes/Minute_319.pdf.

■ Specifically, Mexico would take 50,000 acre-feet less if elevations drop below 1075; 70,000 less if levels drop below 1050; and 125,000 less if levels go below 1025. Provision also was made for Mexico to share in surpluses should future hydrologic conditions permit.

■ Minute 318 had temporarily allowed Mexico to store water it could not take because of damage from the 2010 earthquake.

■ The Colorado River ends at the head of the Gulf of California after passing through a sprawling delta that is a remnant of a huge wetland area in Mexico. Intensive development of the river in the United States has enabled the capture and storage of nearly all water that could not be used in a particular year in excess of the required releases to Mexico. Below the border, and just above the delta, water—often the last visible flow in the channel—is taken out of the river and through the Canal Central at the Morelos Dam for irrigation in the Mexicali Valley.

The depletion of the river’s flow to Mexico has caused serious environmental problems. The riparian corridor along the river’s course in Mexico is valuable for birds and other wildlife, but the river and the surrounding expanse of once rich wetlands have been deprived of water. Lack of water has impaired the habitat of several endangered species in the delta including the totoaba fish, the desert pupfish, the Yuma clapper rail, the willow flycatcher, and the vaquita, which is the world’s smallest and most endangered sea mammal. Ecological values in a biosphere reserve recognized under the United Nations Man and the Biosphere program are threatened. Historically, a fishing industry thrived in the Delta but, with fish populations severely diminished, the industry is nearly gone. See Daniel F. Luecke, *et al.*, *A Delta Once More: Restoring Riparian and Wetland Habitat in the Colorado River Delta*, Environmental Defense Fund Report (1999). See also Robert Jerome Glennon and Peter W. Culp, *The Last Green Lagoon: How and Why the Bush Administration Should Save the Colorado River Delta*, 28 Ecology L.Q. 903 (2002).

pulse flow began and lasted about eight weeks, delivering about 105,000 acre-feet of water into the Delta, temporarily reconnecting the river to the Sea of Cortez for the first time since 1960.■

Minute 323, adopted in 2017, is titled “Extension of Cooperative Measures and Adoption of a Binational Water Scarcity Contingency Plan in the Colorado River Basin.”■ It establishes reservoir levels at Lake Mead at which Mexico will share surpluses and shortages.■ It provides for a Binational Water Scarcity Contingency Plan providing for each country to save specified volumes of water at certain low reservoir elevations for recovery at a later date when reservoir conditions improve.■ The Minute extended Mexico’s ability to store water in Lake Mead initially established under Minutes 318 and 319, specified conditions governing storage and use of “Mexico’s Water Reserve,”■ established a revolving account,■ and continued Mexico’s use of Intentionally Created Mexican Allocation to defer taking a portion of its allocation and store that water in Lake Mead.■ It contains provisions regarding salinity management and the timing of deliveries of water to Mexico.■ It continues cooperative efforts to restore ecological values of the Colorado River Delta.■ Finally, the U.S. committed to

■ A good summary is provided at <https://www.nationalgeographic.com/news/2014/3/140322-colorado-river-delta-pulse-flow-morelos-dam-minute-319-water/>.

■ Available online at <https://www.usbr.gov/lc/region/g4000/4200Rpts/DecreeRpt/2017/42.pdf>.

■ Surplus sharing begins when the projected storage in Lake Mead is at or above elevation 1145 msl on January 1. Minute 323, § II, A. When Mead is between 1145 and 1170 on this date, Mexico is to receive an additional 40,000 acre-feet per year; between 1170 and 1200, 55,000 additional acre-feet; at or above 1200 but without flood control, 80,000 acre-feet; any time flood control measures are required, an additional 200,000 acre-feet.

Shortage sharing of 50,000 acre-feet begins when the January 1 Lake Mead elevation is projected to be at or below 1,075 feet msl and at or above 1,050 feet; 70,000 acre-feet when the January 1 Lake Mead elevation is projected to be below 1,050 feet and at or above 1,025 feet; and 125,000 acre-feet when the January 1 Lake Mead elevation is projected to be below 1,025 feet. Minute 323, § III, A. When the January 1 elevation of Lake Mead is projected to be at or below elevation 1,045 feet msl, the Commission will discuss additional measures for further reductions in both countries. Minute 323, § III, D.

■ Minute 323, § IV.

■ Minute 323, § V. E.

■ Minute 323, § V. B.

■ Minute 323, § V. C.

■ Minute 323, §§ VI & VII.

■ Minute 323, § VIII. Section B provides:

The two Governments will each provide one-third of the following: 210,000 acre-feet (259 mcm) of water for environmental purposes within Mexico over the duration of the Minute; \$9 million dollars of funding for scientific research and monitoring; and \$9 million dollars of funding for restoration projects. The Commissioners note that the binational coalition of NGOs has pledged to provide an equivalent one-third portion of water and funding. These funding commitments for restoration projects are expected to be provided within three years of the effective date of this Minute. Water for the U.S. government environmental commitment, in the amount of 70,000 acre-feet (86 mcm), will be provided in the first five years of this Minute. Further, during the term of this Minute, the two governments will cooperate with the binational coalition of NGOs to identify additional funding,

provide \$31.5 million for projects in Mexico that will conserve 70,000 acre-feet of water to meet the U.S. obligation to provide this amount of water to help restore river and wetland ecology.■

12. Pilot System Conservation Program and Drought Contingency Plans.

As water levels in Lake Mead flirted with the 1075 shortage level, the basin states, some large water users, and the Bureau of Reclamation, initiated the Pilot System Conservation Program in 2014.■ With funding from the Central Arizona Water Conservancy District, the Metropolitan Water District, the Southern Nevada Water Authority, and Denver Water, as well as from the Bureau, the program generated “system” water from a variety of sources through conservation and temporary forbearance of use to help bolster reservoir storage levels, especially in Lake Mead.■ During its four-year life, the program funded 16 projects in the Lower Basin, producing about 175,000 acre-feet of water at a total cost of about \$29.8 million—an average cost of about \$170/acre-foot.■ In the Upper Basin, the program funded 45 projects between 2015 and 2017, for a consumptive use reduction of approximately 22,116 acre-feet, at a total cost of \$4,555,747—an average cost of about \$206/ acre-foot.■

The results were considered sufficiently promising that the basin states and Reclamation committed to Drought Contingency Plans (DCP) beginning in 2019 and extending to 2026.■ In the Lower Basin, the DCP calls for the U.S. to generate 100,000 acre-feet of system water annually, while the three states provide specified amounts of “DCP contributions” dependent on the storage elevation in Lake Mead.■

water supply sources, and to advance water conservation projects to meet the targets for environmental water and restoration recommended by the Binational Environmental Work Group.

■ Minute 323, § IX, A.

■ Agreement among the United States of America, through the Department of the Interior, Bureau of Reclamation with the Central Arizona Water Conservation District, The Metropolitan Water District of Southern California, the Southern Nevada Water Authority, and Denver Water (Local Funding Agencies) for a Pilot Program for Funding the Creation of Colorado River System Water through Voluntary Water Conservation and Reductions in Use, as amended (Funding Agreement), available online at <https://www.usbr.gov/lc/region/programs/PilotSysConsProg/PilotSCPFundingAgreement7-30-2014.pdf>.

■ A summary of the program and its achievements in the Lower Basin is provided at <https://www.usbr.gov/lc/region/programs/PilotSysConsProg/pilotsystem.html>.

■ Pilot System Conservation Program Lower Colorado River Basin Projects—Phases 1 Through 3 (Summary Table), <https://www.usbr.gov/lc/region/programs/PilotSysConsProg/pilotsystem.html>.

■ The Upper Colorado River Commission, Final Report, Colorado River System Conservation Pilot Program in the Upper Colorado River Basin (February 2018), available online at http://www.ucrcommission.com/RepDoc/SCPPDocuments/2018__SCPP__FUBRD.pdf.

■ Agreement Concerning Colorado River Drought Contingency Management and Operations, available online at <https://www.usbr.gov/dcp/docs/final/Companion-Agreement-Final.pdf>. For an excellent discussion of the Drought Contingency Plans, see Anne J. Castle, *Drought Contingency Planning in the Colorado River Basin*, 66 Rocky Mt. Min. L. Inst. 6-1 (2020).

■ Exhibit 1 to the Lower Basin Drought Contingency Plan Agreement, Attachment B to the Agreement Concerning Colorado River Drought Contingency Management and Operations (“Companion

In addition, Lower Basin Drought Contingency Operations are specified that expand on the 2007 Interim Shortage Guidelines.[■] Arizona and Nevada agreed to begin making contributions when Lake Mead elevations are at or below 1090 feet on January 1.[■] Importantly, California committed to providing contributions when Mead elevations reach 1045 feet.[■] Table 4 summarizes the shortage sharing schedules based on Lake Mead elevation levels.

TABLE 4
SHORTAGE SHARING SCHEDULES

Lake Mead Elevation	California (4.4 MAF)	Arizona (2.8 MAF)	Nevada (0.3 MAF)	USBR	Mexico (1.5 MAF)	Total
1090'–1075'	0	192,000	8,000	100,000	41,000	341,000
1075'–1050'	0	512,000	21,000	100,000	80,000	713,000
1050'–1045'	0	592,000	25,000	100,000	104,000	821,000
1045'–1040'	200,000	640,000	27,000	100,000	146,000	1,113,000
1040'–1035'	250,000	640,000	27,000	100,000	154,000	1,171,000
1035'–1030'	300,000	640,000	27,000	100,000	162,000	1,229,000
1030'–1025'	350,000	640,000	27,000	100,000	171,000	1,288,000
Below 1025'	350,000	720,000	30,000	100,000	275,000	1,475,000

Courtesy of Anne J. Castle

The Upper Basin DCP includes an Agreement for Drought Response Operations, an Agreement Regarding Storage at Colorado River Storage Project Act Reservoirs Under an Upper Basin Demand Management Program, and an Upper Basin Demand Management Program.[■] The drought response operations agreement provides the framework for operating the “initial” units built under the Colorado River Storage Project Act (Glen Canyon Dam, Flaming Gorge Dam, Curecanti (the “Aspinall Unit”), and Navajo Dam) so as to protect the storage elevation of Lake Powell from going

Agreement”), available online at <https://www.usbr.gov/dcp/docs/final/Attachment-B-LB-DCP-Agreement-Final.pdf>.

[■] Exhibit 1 to the Lower Basin Drought Contingency Plan Agreement, Attachment B to the Agreement Concerning Colorado River Drought Contingency Management and Operations (“Companion Agreement”), available online at <https://www.usbr.gov/dcp/docs/final/Attachment-B-LB-DCP-Agreement-Final.pdf>.

[■] Arizona’s contributions are to be 192,000 acre-feet annually when Mead is at or below 1090 feet; at 1045, its contributions increase to 240,000 acre-feet. Nevada agreed to contribute 8,000 acre-feet annually when Mead is at or below 1090 feet, increasing to 10,000 acre-feet if Mead reaches 1045 or less. California begins to make contributions when Mead reaches 1045 feet. At elevations between 1045 and 1040, California agreed to contribute 200,000 acre-feet per year. It further agreed to increase its contribution to as much as 350,000 acre-feet if Mead is at or below 1030 feet.

[■] See *supra* preceding footnote (immediately above). In the Colorado River Basin Project Act of 1968, Pub. L. No. 90-537, 82 Stat. 88, California was given priority for its full 4.4 million acre-foot apportionment over water to be diverted by the Central Arizona Project. Section 301(b).

[■] Agreement Concerning Colorado River Drought Contingency Management and Operations, available online at <https://www.usbr.gov/dcp/docs/final/Companion-Agreement-Final.pdf>.

below 3,525 feet. The storage agreement authorizes the use of these same reservoirs to store water generated by Upper Division states under their demand management programs. The demand management program sets out strict rules governing the nature of the water that can be provided for storage under the program.¹¹ The agreement states:

The Upper Division States, through the Commission, and the Secretary must enter into agreement(s) on the methodology, process and documentation for verification and accounting for the creation, conveyance, and storage of conserved water to be stored in and released from a CRSPA Initial Unit as part of a Demand Management Program.¹²

C. Effective Priorities on the Colorado River.

1. Introduction.

The array of compacts, treaties, court decisions, legislation, and administrative actions effectively creates a system of “priorities” to divert and use Colorado River water. They can be summarized as follows.

2. Water for Mexico.

Delivery of 1.5 million acre-feet of water from the Colorado River to Mexico each year under the 1944 Treaty with Mexico constitutes the first priority. The 1922 Colorado River Compact provided that future commitments of water to Mexico should

¹¹ Section III B. 2 (a), Attachment A2 to the Agreement Concerning Colorado River Drought Contingency Management and Operations, available online at <https://www.usbr.gov/dcp/docs/final/Companion-Agreement-Final.pdf>:

If the Upper Division States, through the Commission, agree that an Upper Basin Demand Management Program is feasible and pursue development of a program, it must include, at a minimum, the following water conservation, storage and release considerations:

- a. Water conserved shall only be recognized as part of any Upper Basin Demand Management Program if:
 - i. The source of conserved water is Upper Colorado River System water, or water that has been imported into the Upper Colorado River System from outside the Colorado River System;
 - ii. The water is conserved, stored and released for the specific purpose of helping the Upper Division States assure continued compliance with Article III of the Colorado River Compact;
 - iii. For Upper Colorado River System water, the water must have been beneficially and consumptively used under existing water rights prior to being conserved as part of a Demand Management Program;
 - iv. For Upper Colorado River System water, the water must have been physically available for diversion in the year it was conserved, and would have been beneficially and consumptively used within a state or states of the Upper Division but for the conservation for the benefit of a Demand Management Program; and
 - v. The conserved or Imported Water has arrived at a CRSPA Initial Unit after accounting for any conveyance and associated losses.

¹² Section III B. 2 (b), Attachment A2 to the Agreement Concerning Colorado River Drought Contingency Management and Operations, available online at <https://www.usbr.gov/dcp/docs/final/Companion-Agreement-Final.pdf>.

be made available out of the supposed unallocated surplus in the river, with any deficiency to be borne equally by the Upper Basin and the Lower Basin.[■] The Colorado River Basin Project Act of 1968 made releases from Lake Powell to satisfy the obligation to Mexico, if needed, the first priority.[■] Since it was increasingly unclear that there was any unallocated surplus, the Secretary of the Interior concluded in 1970 the Lower and Upper Basins must each provide 750,000 acre-feet of Colorado River water annually. The Secretary of the Interior's Operating Criteria specify that annual releases from Glen Canyon are to include 750,000 acre-feet earmarked for delivery to Mexico. Even though the 1968 Act expressly made delivery of water to Mexico a "national obligation," the U.S. has not fulfilled that obligation.[■] Mexico and the U.S. now have agreed to arrangements under which Mexico will share shortages and surpluses.[■]

3. Present-Perfected Rights.

Article VIII of the Colorado River Compact provides that "[p]resent perfected rights to the beneficial use of water of the Colorado River System are unimpaired by this compact." At the time the Compact was being negotiated, the Reclamation Service estimated that nearly 2.5 million acres of land were being irrigated in the United States with Colorado River water.[■] In addition, the 1928 Boulder Canyon Project Act recognized the "satisfaction of present-perfected rights" as one of the purposes for building Hoover Dam, and made such satisfaction of these rights a specified use of the dam.[■] In the 1964 Decree implementing its 1963 decision in *Arizona v. California*, the U.S. Supreme Court defined a perfected right as "a water right acquired in accordance with State law, which right has been exercised by the actual diversion of a specific quantity of water that has been applied to a defined area of land, or to definite municipal or industrial works, and in addition shall include water rights created by the reservation of mainstream water for the use of Federal establishments under Federal law, whether or not the water has been applied to beneficial use; . . .".[■] The Court included as perfected rights in the Lower Basin mainstem those established as of the date the Boulder Canyon Project Act was declared effective (June 25, 1929). The opinion in

■ Colorado River Compact, art. III(c).

■ Section 602(a)(1) of the Colorado River Basin Project Act of 1968, Pub. L. No. 90-537, 82 Stat. 88. The provision states: "releases to supply one-half the deficiency described in article III(c) of the Colorado River Compact, if any such deficiency exists and is chargeable to the States of the Upper Division . . .".

■ Colorado River Basin Project Act of 1968, Pub. L. No. 90-537, 82 Stat. at 900, § 202, 43 U.S.C. § 1512. Congress's intention was that water would be imported into the Colorado River Basin from another source and to ensure that first use of such imported water would be to meet the Treaty obligation. No such augmentation plan was ever developed.

■ See *supra* § III.B.11 and Table 4.

■ Norris Hundley, Jr., *Water and the West: The Colorado River Compact and the Politics of Water in the American West* 146-47 (1975).

■ Boulder Canyon Project Act of 1928, Pub. L. No. 70-642, 45 Stat. 1057, § 6, 43 U.S.C. § 617e.

■ *Arizona v. California*, 376 U.S. 340, 341 (1964).

Arizona v. California included all the Indian reserved rights covered by this decision as present perfected rights. Moreover, the Court ruled that if less than 7.5 million acre-feet of Colorado River water is available in any year for consumptive use in the Lower Division States (Arizona, California, and Nevada) the Secretary of the Interior is to administer the river so as to satisfy, first, all those holding present-perfected rights and to do so on a chronological, priority basis without regard for state lines.

In the 1964 Decree, the Supreme Court also set up a process for identifying and quantifying present-perfected rights in the Lower Basin. In a 1979 Supplemental Decree, the Court specified the priority dates and annual quantities of water that may be used under each of these rights for a total of more than 4 million acre-feet, 3 million acre-feet of which are in California (including 2.6 million acre-feet for the Imperial Irrigation District).¹²² Tribal water rights, most of which are in Arizona, amount to about 900,000 acre-feet of the total present-perfected rights.

Under the 1948 Upper Colorado River Basin Compact, curtailment of water uses in the Upper Basin to meet downstream obligations will not include valid existing water rights established prior to the finalization of the Colorado River Compact on November 4, 1922.¹²³ An estimate of the quantity of water used under such rights is about 2.2 million acre-feet.¹²⁴

4. Basic Apportionment Water for the Lower Basin.

The 1922 Colorado River Compact apportioned 7.5 million acre-feet of consumptive use of Colorado River System water to the Lower Basin.¹²⁵ The Compact further provided that the Lower Basin will receive at least 75 million acre-feet of mainstem Colorado River water at Lee Ferry in any consecutive ten-year period.¹²⁶ Congress also attempted to make certain the Lower Basin would receive at least its full basic apportionment of water by authorizing construction of Hoover Dam in 1928, and then Glen Canyon Dam (and three other large projects in the Upper Basin) in the Colorado River Storage Project Act of 1956. The Compact further gives the Lower Basin the “right” to increase its consumptive use by another 1 million acre-feet.¹²⁷ The major southern California water agencies entered into the Seven Party Agreement in 1931, giving first priority to the Palo Verde Irrigation District, followed by the Yuma Project, and third priority to the Imperial and Coachella Districts as users taking water through

¹²² *Arizona v. California*, 439 U.S. 419 (1979).

¹²³ Upper Colorado River Basin Compact, Art. IV(c), available online at <https://www.usbr.gov/lc/region/g1000/pdfiles/ucbsnact.pdf>.

¹²⁴ See Eric Kuhn, Risk Management Strategies for the Upper Colorado River Basin 10 (2012), available online at https://www.coloradoriverdistrict.org/wpcontent/uploads/2014/11/Kuhn_on_Risk_Mgt_Strategies_of_the_UCRB.pdf.

¹²⁵ Colorado River Compact, art. III(a).

¹²⁶ Colorado River Compact, art. III(d).

¹²⁷ Colorado River Compact, art. III(b). In practice, this water is used by Arizona from the Gila River Basin.

the All American Canal, as well as for other lands in Palo Verde.■ Some of these allocations were made in terms of acreage, not consumptive use, but the agreement set a cap on all these uses of 3,850,000 acre-feet per year.■ The Metropolitan Water District of Southern California was given fourth priority for 550,000 acre-feet of water annually, bringing the total to 4.4 million acre-feet of water annually.■ As explained above, the U.S. Supreme Court ultimately established basic allocations of the three Lower Division states as 2.8 million acre-feet for Arizona, 4.4 million for California, and 300,000 for Nevada.■

The manner in which the Secretary of the Interior operates Hoover Dam and Glen Canyon Dam provides further security that at least 7.5 million acre-feet of Colorado River water per year will be delivered to the Lower Basin, assuming sufficient water availability from the Upper Basin. The Colorado River Basin Project Act of 1968 directed the Secretary of the Interior to develop long-range operating criteria (“Operating Criteria”) for these reservoirs.■ The Secretary’s Operating Criteria called for a “minimum objective release” of 8.23 million acre-feet per year from Lake Powell (calculated by annualizing the ten-year 75 million acre-feet obligation to 7.5 million acre-feet, adding 750,000 acre-feet to satisfy the Mexican Treaty obligation, and subtracting 20,000 acre-feet as the estimated annual inflow from the Paria River (which enters the Colorado River below Glen Canyon Dam, but above Lee Ferry). More than this amount of water was to be released so long as storage in Lake Powell exceeded a certain level, but a *minimum* release of 8.23 million acre-feet per year was to be made, irrespective of water conditions in the Lower Basin. These Operating Criteria have been replaced by the Interim Shortage Guidelines, discussed above.■

5. Water for the Upper Basin.

In theory, the Upper Division states hold an apportionment to 7.5 million acre-feet per year of consumptive use rights to Colorado River system water. The Upper Colorado River Basin Compact allocated the Upper Basin share among the states by percentage shares (except for the direct allocation to Arizona). As shown in Table 5, actual consumptive uses in the Upper Division states are well below the theoretical 7.5

■ Agreement, Requesting Apportionment of California’s Share of the Waters of the Colorado River Among the Applicants in the State, arts. I–III, August 18, 1931, available online at <https://www.usbr.gov/lc/region/g1000/pdfs/ca7pty.pdf>.

■ Agreement, Requesting Apportionment of California’s Share of the Waters of the Colorado River Among the Applicants in the State, art. I, Sec. 3, August 18, 1931, available online at <https://www.usbr.gov/lc/region/g1000/pdfs/ca7pty.pdf>.

■ Agreement, Requesting Apportionment of California’s Share of the Waters of the Colorado River Among the Applicants in the State, art. I, Sec. 4, August 18, 1931, available online at <https://www.usbr.gov/lc/region/g1000/pdfs/ca7pty.pdf>. The Quantification Settlement Agreement, discussed further *supra* § III.B.9, clarified specific amounts of water among the irrigation entities.

■ *Arizona v. California*, 373 U.S. 546, 579 (1963).

■ Section 602A of the Colorado River Basin Project Act of 1968, Pub. L. No. 90-537, 82 Stat. 88.

■ *See supra* § III.B.10.

million acre-foot apportionment, and it is widely agreed that the Upper Division states will never be able to use their potential allocations.■

Concern about entering into long-term contracts for water from Navajo Reservoir in the 1960s prompted Congress to require Interior to do a “hydrologic determination” of probable future water availability for use in the Upper Basin.■ The report, issued in 1984, concluded that there was 5.8 million acre-feet of water available for consumptive use in the Upper Basin, a conclusion changed to 6.0 million acre-feet in 1988.■ A subsequent report in 2007 concluded that 6.01 million acre-feet was available.■ Prolonged drought has heightened concerns about the effects of additional consumptive use of water in the Upper Basin.■

TABLE 5

**CONSUMPTIVE USES ALLOWED BY THE UPPER BASIN
COMPACT AT DIFFERENT LEVELS OF WATER AVAILABILITY**

RECIPIENT	COMPACT PERCENT	7.5 maf	6.0 maf	5.0 maf	Actual Usage* (2011–2015 average)
Arizona		.05	.05	.05	.034
Colorado	51.75%	3.88	3.1	2.59	2.45
New Mexico	11.25%	0.84	0.675	0.56	.374
Utah	23.00%	1.725	1.38	1.15	.868
Wyoming	14.00%	1.05	0.84	0.7	.385
Reservoir evaporation					.544
Upper Basin Total	100.00%	7.5	6.045	5.05	4.655
* Bureau of Reclamation, PROVISIONAL Upper Colorado River Basin Consumptive Uses and Losses Report 2011–2015, Table: Summary (2017).					

■ An analysis done for the Upper Colorado River Commission in 1965 reached that conclusion based on an evaluation of historic basin hydrology. Tipton and Kalmbach, Water Supplies of the Colorado River Available for Use by the States of the Upper Division and for Use from the Main Stem by the States of Arizona, California, and Nevada in the Lower Basin, July 1965, at 5.

■ Pub. L. No. 87-483, § 11(a).

■ Bureau of Reclamation, Hydrologic Determination 1988, Water Availability from Navajo Reservoir and the Upper Colorado River Basin for Use in New Mexico, at 1, available online at <http://www.riversimulator.org/Resources/USBR/HydroDetermination1988.pdf>.

■ Bureau of Reclamation, Hydrologic Determination 2007, Water Availability from Navajo Reservoir and the Upper Colorado River Basin for Use in New Mexico, at 1, available online at <http://www.riversimulator.org/Resources/USBR/2007HydrologicDetermination.pdf>.

■ A useful analysis from 2012 is provided by Eric Kuhn, Risk Management Strategies for the Upper Colorado River Basin, available online at https://www.coloradoriverdistrict.org/wp-content/uploads/2014/11/Kuhn_on_Risk_Mgt_Strategies_of_the_UCRB.pdf.

6. Additional Unused Water for Lower Basin Uses.

The 1922 Compact directs that unused Colorado River water pass to the Lower Basin if there are domestic and agricultural uses to which the water may be applied.[■] Since the Upper Basin still consumes less than its full basic apportionment, unused water had been regularly available until recent years. In fact, the Secretary of the Interior in the early 1930s entered into delivery contracts with California users for 5.3 million acre-feet of water, well beyond the state's basic entitlement of 4.4 million acre-feet. By the 1950s California was taking delivery of more than 4.4 million acre-feet of Colorado River water. Since Arizona at that time was not using its 2.8 million acre-foot entitlement, the source of the extra water was regarded as within the Lower Basin's 7.5 million acre-foot basic apportionment.

Beginning in about 1990, however, with completion of the Central Arizona Project, the Lower Basin began consuming more than its basic apportionment. Upper Basin concern about this use prompted an effort, described above,[■] to force California users to reduce their consumption to the 4.4 million acre-foot limitation required in the Boulder Canyon Project Act. The 2007 Interim Guidelines provided some additional guidance.[■] With the reduction of water supplies in the Upper Basin starting to limit the release of additional water to the Lower Basin, the imbalance in the Lower Basin resulting from water uses, including evaporation, exceeding inflows—referred to as the structural deficit—has become apparent.[■]

7. Water for In-Place Uses.

Most of the Law of the River focuses on allocation of “consumptive uses” of the water of the Colorado River. To the degree that it is explicitly acknowledged, hydroelectric power generation is characterized as a secondary or incidental use of

[■] Colorado River Compact, art. III(e).

[■] See supra § III.B.9.

[■] Record of Decision, Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead, Section 6. Coordinated Operation of Lake Powell and Lake Mead During the Interim Period, § 1, at 33, December 2007:

Before making a determination of a Surplus Condition under these Guidelines, the Secretary will determine the quantity of apportioned but unused water excluding ICS created in that Year from the basic apportionments under Article II(B)(6), and will allocate such water in the following order of priority:

1. Meet the Direct Delivery Domestic Use requirements of MWD and Southern Nevada Water Authority (SNWA), allocated as agreed by said agencies;
2. Meet the needs for Off-stream Banking activities for use in California by MWD and for use in Nevada by SNWA, allocated as agreed by said agencies; and
3. Meet the other needs for water in California in accordance with the California Seven-Party Agreement as supplemented by the Quantification Settlement Agreement.

[■] For a discussion of the structural deficit, see Colorado River Research Group, A Look at the Interim Guidelines at Their Mid-Point: How Are We Doing? December 2015, available online at https://www.coloradoriverresearchgroup.org/uploads/4/2/3/6/42362959/crrg_interim_guidelines_white_version_updated2.pdf.

water impounded by the major federal storage facilities throughout the Basin even though it is the largest use of basin water. Revenue from hydroelectric generation is the major source of income for reimbursing the substantial costs of these facilities to the U.S. Treasury, and provides money to both an Upper Basin and a Lower Basin Fund that support numerous activities in the basin. In Fiscal Year 2018, the Western Area Power Administration reported that revenues from hydroelectric facilities at Reclamation dams in the Colorado River basin totaled about \$272 million.¹⁰ While hydroelectric power generation does not affect the *annual* quantities of consumptive use water available to those holding apportionments of water from the Colorado River for consumptive uses (except for the associated reservoir evaporation), it has historically driven the manner in which much of the storage water is released on a daily basis (for example, releasing water to meet peak power demands). Thus, hydroelectric power needs historically have determined the day-to-day operations of the numerous Bureau of Reclamation storage facilities within the Basin.

Concerns about the adverse environmental effects of hydroelectric power operations at certain locations within the Basin have prompted changes in operations of several facilities in recent years. In the Grand Canyon Protection Act of 1992, Congress directed the Secretary of the Interior to “operate Glen Canyon Dam . . . in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park . . . [was] established, including but not limited to natural and cultural resources and visitor use.”¹¹

Perhaps more far-reaching in its effect on water management in the Colorado River Basin is the obligation of federal agencies under the Endangered Species Act¹² to protect four endangered fish species: the razorback sucker, the Colorado pikeminnow, the humpback chub, and the bonytail chub. Most of the remaining populations of these fishes are found in the Upper Basin, and a recovery plan intended to restore these species to viable condition is in place.¹³ An important element of the recovery plan is to provide adequate streamflow conditions in essential habitat areas. Moreover, virtually the entire mainstem Colorado River has been designated as critical habitat for one or more of the endangered fishes.¹⁴ A separate recovery implementation program exists for the San Juan Basin.¹⁵ In 2005, the Lower Basin put in place a multi-species

¹⁰ Western Area Power Administration, Value of WAPA, Statistical Appendix, 2018 Annual Report at 13 (Power Sales).

¹¹ Grand Canyon Protection Act of 1992, Pub. L. No. 102-575, § 1802(a), 106 Stat. 4600, 4669 (1992). More recent efforts to protect the Grand Canyon are recounted *infra* § III.D.4.

¹² Pub. L. No. 93-25, 87 Stat. 884 (1973) (codified at 16 U.S.C. § 1531 (1988)); 50 C.F.R. § 17.11. See generally *supra* Treatise § 39.02(b). Implementation of a recovery program is discussed *infra* in § III.D.3.

¹³ Fish and Wildlife Service Region Six, U.S. Department of the Interior, Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (1993).

¹⁴ 58 Fed. Reg. 6578 (1993).

¹⁵ Information about this program is available online at <https://www.fws.gov/southwest/sjrip/index.cfm>.

habitat conservation plan to address an array of species concerns along the Colorado River within the U.S.■

D. Water Management.

1. Introduction.

The Law of the River shifted focus beginning in the 1970s, as environmental issues and water shortages emerged as the primary concerns.

2. Colorado River Basin Salinity Control Program.

The Colorado River begins as extremely high-quality water from snowmelt in the mountains of Colorado and Wyoming. As it moves through the Basin toward Mexico the river and its tributaries pass through geologic formations that once contained inland seas. Sediments in these formations are high in minerals such as carbonates, chlorides, and sulfates of calcium, magnesium, and sodium.■ Thus:

As a result of this geology, the continuing weathering and eroding now accelerated by human activity, and the growing consumption of its waters, the Colorado becomes increasingly saline over the course of its journey: from mountain streams containing as little as 50 mg/l of TDS [total dissolved solids] to a main stem containing 700 to 800 mg/l at Imperial Dam above the Mexican border. (By way of comparison, ocean water averages about 35,000 mg/l or 3.5 percent TDS.) Some 9 million tons of salt are estimated to be transported into the river's lower reaches annually.■

Approximately half of the salinity concentration in the river at Hoover Dam is attributed to natural sources with the other half being caused by human activity.■

Salt loading in the Colorado became a major policy issue in the Colorado River Basin in 1961 with the discharge of extremely saline drainage water from the Wellton-Mohawk division of the Gila Project into the river just above the Mexican border.■ Crop losses in the Mexicali Valley eventually led to the negotiation of Minute 242 in 1973, by which the U.S. agreed that water delivered to Mexico would have an annual average TDS of not more than 115 parts per million (plus or minus 30) greater than the annual average salinity at Imperial Dam—the last major diversion facility on the river within the U.S.■

The following year Congress passed the Colorado River Basin Salinity Control Act authorizing the construction of various projects in the Upper Basin—Paradox Valley,

■ Information about this program is available online at <https://www.lcrmscp.gov>. Its implementation is discussed *infra* in § III.D.5.

■ Taylor O. Miller, Gary D. Weatherford & John E. Thorson, *Salty Colorado* 2 (1986). Salinity is a generic term for a range of dissolved mineral salts described as “total dissolved solids” or TDS. “The major constituents accounting for salinity are calcium, magnesium, sodium, bicarbonate, chloride, and sulfate. Calcium and magnesium cause hardness in water and are of most concern to urban and industrial users. Sodium and chloride are most harmful to agriculture.” *Id.* at 3.

■ Taylor O. Miller, Gary D. Weatherford & John E. Thorson, *Salty Colorado* 4 (1986).

■ Bureau of Reclamation, U.S. Department of the Interior, Colorado River Basin Salinity Control Forum, “Salinity Update” at 1 (1994). The natural sources include mineral springs and geysers while the human-induced causes are from consumptive use of water, reservoir evaporation, and out-of-basin exports.

■ Taylor O. Miller, Gary D. Weatherford & John E. Thorson, *Salty Colorado* 24 (1986).

■ T.I.A.S. No. 7708, 68 A.J.I.L. 376 (1974), 12 I.L.M. 1105 (1974).

Grand Valley, Crystal Geyser, and Las Vegas Wash, aimed at insuring the ability to meet this commitment.[■] The Act also authorized construction of a desalting plant near Yuma, Arizona as well as construction of a drainage canal that would bypass the Colorado River and take highly saline return flows from a Reclamation irrigation project (Wellton-Mohawk) directly to the Gulf of California. The Act authorized concrete lining of the Coachella Canal, and construction of a well field along the Mexican border capable of helping provide water to Mexico.[■] In 2017, the Colorado River Basin Salinity Control Forum stated that “the Program has reduced the annual salt loading in the Colorado River by approximately 1,330,000 tons, resulting in over 100 mg/L reduction in salinity concentrations in the Lower Basin.”[■]

Regulation of salinity under the Clean Water Act has followed a unique path. Typically states set water quality standards for water bodies within their boundaries according to the uses of the water that are to be protected.[■] For the Colorado River, numeric standards for TDS were established by the Colorado River Basin Salinity Control Forum—an organization established in 1973 with representatives from each of the basin states—to be met at three locations in the Lower Basin: below Hoover Dam, below Parker Dam, and below Imperial Dam. In effect, the standards create a policy of not allowing salinity to increase beyond 1972 levels.[■]

3. Upper Colorado River Endangered Fish Species Recovery Program.

Construction and operation of the extensive system of reservoirs in the Colorado River Basin permanently altered the physical characteristics of the Colorado River and many of its tributaries. The dams capture peak flows, greatly reducing seasonal inundation of riparian areas and changing the free-flowing nature of the river by creating a series of lake-like environments. As the flowing water moves into impoundments, sediments in the water fall out. Releases from the on-stream reservoirs are of much clearer water than would naturally exist. Moreover, the releases are much colder than natural water—coming from the deeper strata in the reservoirs where the water is not warmed by exposure to the sun.

This radically-changed stream environment threatens the continued existence of four fish species native to the Colorado River: the pikeminnow, formerly known as the

[■] Pub. L. No. 93-328 Stat. 266 (1974).

[■] In subsequent amendments, Congress authorized the United States Department of Agriculture’s (USDA) on-farm program (Pub. L. No. 98-569 (1984)), created the United States Bureau of Reclamation’s Basinwide Salinity Control Program (Pub. L. No. 104-20 (1995)), authorized up-front cost sharing by the Basin States and modified the USDA authorities, including the use of the Environmental Quality Incentives Program (EQIP) (The Federal Agriculture Improvement and Reform Act (Pub. L. No. 104-127) (1996)), increased the appropriation ceiling Pub. L. No. 106-459 (2000)), created the Basin States Program (The Food, Conservation, and Energy Act of 2008 (Pub. L. No. 110-246) (2008 Farm Bill)), and continued the authorization of EQIP (The Agricultural Act of 2014 (Pub. L. No. 113-79) (2014)).

[■] Colorado River Basin Salinity Control Forum, 2017 Review, Water Quality Standards for Salinity Colorado River System 13, October 2017.

[■] See generally *supra* Treatise § 54.02.

[■] Taylor O. Miller, Gary D. Weatherford & John E. Thorson, *Salty Colorado* 26 (1986).

Colorado squawfish, humpback chub, bonytail chub, and razorback sucker.■ Substantial dam development in the Lower Basin beginning in the 1920s totally extirpated the pikeminnow in this area, and the only viable remaining species is a population of humpback chub in the Little Colorado River near its confluence with the mainstem.■ Stocking programs are helping to maintain remnant populations of razorback suckers in Lake Mohave, and razorback suckers and bonytail chubs in Lake Havasu. In less altered portions of the Upper Basin, populations of the four species still existed in the early 1960s, but all these species are now listed as endangered under the Endangered Species Act.■

The Endangered Species Act included a congressional mandate to federal agencies in 1973 to attempt to “recover” endangered species. It led the U.S. Fish and Wildlife Service to conclude that any additional depletions of water in the Upper Basin would jeopardize the continued existence of these species. As summarized by Wydoski and Hamill, the Fish and Wildlife Service concluded that water depletions:

1. reduced the quantity and quality of back-water habitats formed by high runoff during spring—habitats that are used extensively during migration and spawning;
2. reduced the availability of nursery areas or rearing habitat essential for survival of young;
3. reduced sediment transport capacity of the river, which in turn affected basic productivity and availability of important habitats used by the endangered fishes;
4. created river habitats favoring non-native fishes that compete with or prey upon endangered fishes; and
5. reduced the future flexibility to manage stream flows to benefit endangered fishes (i.e., the water that is consumptively used cannot be managed, appropriated or acquired to benefit endangered fishes).■

■ Fish and Wildlife Service Region Six, U.S. Department of the Interior, Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (1993).

■ Richard S. Wydoski & John Hamill, *Evolution of a Cooperative Recovery Program for Endangered Fish in the Upper Colorado River Basin*, in *Battle Against Extinction, Native Fish Management in the American West* 124–25 (1991).

■ In addition to the adverse effects of dam construction and operation in the Upper Basin in this period, a concerted government program in the early 1960s of rotenone treatment—particularly in the Green River above Flaming Gorge Dam—eliminated large numbers of these fish. Richard S. Wydoski & John Hamill, *Evolution of a Cooperative Recovery Program for Endangered Fish in the Upper Colorado River Basin*, in *Battle Against Extinction, Native Fish Management in the American West* 124 (1991). The purpose of this poisoning program was to eliminate these “undesirable” native species so that sport fishes such as trout could be introduced.

■ Richard S. Wydoski & John Hamill, *Evolution of a Cooperative Recovery Program for Endangered Fish in the Upper Colorado River Basin*, in *Battle Against Extinction, Native Fish Management in the American West* 126 (1991).

Consequently, beginning in 1977 the Fish and Wildlife Service began issuing “jeopardy” biological opinions under Section 7 of the Endangered Species Act for all new water development projects in the Upper Basin. As a “reasonable and prudent alternative,” however, the Fish and Wildlife Service recommended such things as offsetting water releases from existing storage and, beginning in 1981, payment of a one-time depletion charge with the funds to be used to help fund habitat improvements.¹⁴

Additional efforts by the Fish and Wildlife Service to establish minimum flow requirements for the fishes led to the formation in 1984 of a federal-state coordinating committee including environmental and water user representatives to develop a recovery program for the fish. The recovery program was finalized in 1987, and set out a 15-year, \$60 million effort centered around improving streamflows, improving habitat, fish stocking, management of non-native species, and a research and monitoring program.¹⁵ A more detailed “Recovery Implementation Program Recovery Action Plan” was completed in 1993, and is updated annually.¹⁶ A similar recovery implementation program for the San Juan River Basin was established in 1992.¹⁷ In 1999 Congress enacted Public Law 106-392, authorizing the Bureau of Reclamation to provide cost sharing for base funding for operation of capital projects and annual operations for the endangered fish recovery programs in the Upper Colorado River and San Juan River basins. Section 9107 of Public Law 111-11 extended the Bureau of Reclamation’s authorization to provide funding for capital projects for the recovery programs through 2023. In 2002, the Fish and Wildlife Service established specific recovery goals for the four listed fish species.¹⁸ The two Upper Basin recovery programs produce an annual report summarizing progress to date under the programs.¹⁹

For the program to continue to serve as a reasonable and prudent alternative enabling continued water development and use in the Upper Basin, it must demonstrate that “sufficient progress” toward recovery is being made. In its annual “sufficient progress” memorandum for 2017–2018, the Fish and Wildlife Service stated: “The Service is

¹⁴ For a discussion of the so-called “Windy Gap process” of requiring depletion charges, see Lawrence J. MacDonnell, *The Endangered Species Act and Water Development Within the South Platte Basin*, in Natural Resources Law Center Research Report 30–39 (1985). See also Richard S. Wydoski & John Hamill, *Evolution of a Cooperative Recovery Program for Endangered Fish in the Upper Colorado River Basin*, in *Battle Against Extinction, Native Fish Management in the American West* 126–28 (1991).

¹⁵ Fish and Wildlife Service Region Six, U.S. Department of the Interior, Final Environmental Assessment, Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (1987).

¹⁶ Fish and Wildlife Service Region Six, U.S. Department of the Interior, Recovery Implementation Program for Endangered Fish Species in the Upper Colorado River Basin (1993).

¹⁷ Information about this program is available online at <https://www.fws.gov/southwest/sjrip/index.cfm>.

¹⁸ The goals for each of the four species can be found on the recovery program web site at <http://www.coloradoriverrecovery.org/documents-publications/foundational-documents/recovery-goals.html>.

¹⁹ <http://www.coloradoriverrecovery.org/documents-publications/work-plan-documents/project-annual-reports.html>.

confident that with continued cooperation by all Recovery Program participants, the Recovery Program will continue to make significant strides toward recovery of the four endangered fishes.”¹⁰ It noted, however, that the Cooperative Agreement expires in 2023.¹¹

4. Grand Canyon Protection Act.

Glen Canyon Dam, like all the other dams on the Colorado River, was built without benefit of an environmental impact review. Authorized by the Colorado River Storage Project Act of 1956, Glen Canyon Dam was intended to ensure full deliveries of the Lower Basin allocation from the Upper Basin. The dam is located just above Lee Ferry, the dividing point between basins, and only about 60 miles upstream of Grand Canyon National Park.

Annual operations of the Glen Canyon Dam are dictated primarily by delivery obligations to the Lower Basin, but daily (and, indeed, hourly) operations have been determined by the hydroelectric power operations which have responded to high value peak demands for power at certain times of the day.¹² Whitewater rafters in the Grand Canyon complained to the National Park Service about the increased dangers resulting from rapid and substantial variation in the releases of water from Lake Powell, and about the eroding beaches within the canyon caused by the sharp reduction in the sediment loading of the river in this reach as a result of the upstream dam. Environmental and recreational groups concerned with the alteration of the river’s natural condition initiated legal action when an increase was proposed in the “peaking” power capacity of the turbines at Glen Canyon. This led to comprehensive environmental studies of the effects of the dam operations on ecosystems and recreational uses.¹³ Following completion of the studies, the Secretary of the Interior instituted an environmental impact statement. The EIS scientific work was coordinated with a second round of Glen Canyon Environmental Studies. The studies confirmed that

¹⁰ Memorandum from Regional Director, Mountain-Prairie Region, U.S. Fish and Wildlife Service to Implementation/Management Committee, 2017–2018 Abbreviated Assessment of Sufficient Progress under the Upper Colorado River Endangered Fish Recovery Program in the Upper Colorado River Basin, and of Implementation of Action Items in the December 20, 1999, 15-Mile Reach Programmatic Biological Opinion, the December 4, 2009, Gunnison River Basin Programmatic Biological Opinion, and the January 10, 2005, Yampa River Basin Programmatic Biological Opinion, December 19, 2018, at 22.

¹¹ Memorandum from Regional Director, Mountain-Prairie Region, U.S. Fish and Wildlife Service to Implementation/Management Committee, 2017–2018 Abbreviated Assessment of Sufficient Progress under the Upper Colorado River Endangered Fish Recovery Program in the Upper Colorado River Basin, and of Implementation of Action Items in the December 20, 1999, 15-Mile Reach Programmatic Biological Opinion, the December 4, 2009, Gunnison River Basin Programmatic Biological Opinion, and the January 10, 2005, Yampa River Basin Programmatic Biological Opinion, December 19, 2018, at 22. The current Congressional authorization for funding the program also expires in 2023.

¹² The Colorado River Storage Project Act directed operation of hydroelectric facilities constructed under its authority to “produce the greatest practicable amount of power and energy that can be sold at firm power and energy rates.” Pub. L. No. 84-485, 70 Stat. 105 (1956) (codified at 43 U.S.C. § 620f).

¹³ Glen Canyon Environmental Studies, Revised Final Report (1988).

fluctuating releases from power plant operations caused significant adverse impacts on the downstream fish and riparian habitats and on whitewater rafting.

In 1992, Congress passed the Grand Canyon Protection Act. Among other provisions, the Act directed the Secretary of the Interior to operate Glen Canyon Dam in a manner that protects Grand Canyon National Park.¹⁰ During the EIS preparation, the Secretary of the Interior implemented Interim Operating Criteria for Glen Canyon that: (1) reduced the maximum allowable non-flood releases to 20,000 cfs (a 37 percent reduction below the powerplant's capacity); (2) increased minimum flows to 5,000 cfs at night and 8,000 cfs during the day (from 1,000 cfs in the winter and 3,000 cfs in the summer); (3) reduced maximum fluctuations in releases to three feet in any 24-hour period (from 13 feet); and (4) limited "ramping" rates (by which releases are increased or decreased) to 2,500 cfs per hour increases and 1,500 cfs per hour decreases.¹¹

In 1997, Secretary established the Glen Canyon Dam Adaptive Management Program.¹² The Department has been experimenting with high flow short-term releases from Glen Canyon to mobilize sediment to rebuild beaches and sandbars below the dam in the Grand Canyon.¹³ It has made such releases in 2012, 2013, 2016, and 2018. In 2016, the Bureau of Reclamation and the National Park Service completed the environmental impact statement for the Long-Term Experimental and Management Plan (LTEMP).¹⁴ The EIS evaluated dam operations and identified management actions and experimental options that will provide a framework for adaptively managing Glen Canyon Dam over the following 20 years.¹⁵ The Record of Decision, finalized in December 2016, selected an alternative regarded as best suited to meet the resource goals of LTEMP.¹⁶

5. Lower Colorado River Multi-Species Conservation Program.

In 2005, the Lower Basin established a Multi-Species Conservation Program intended to cover 27 species, 6 already listed under the ESA.¹⁷ Designed as a 50-year, \$626 million program, the anticipated activities of federal, state, and local entities and other parties within the Lower mainstem Colorado River and its floodplain are considered to be in compliance with the ESA during this period. The program operates

¹⁰ Grand Canyon Protection Act of 1992, Pub. L. No. 102-575, § 1802(a), 106 Stat. 4600, 4669 (1992).

¹¹ Bureau of Reclamation, U.S. Department of the Interior, Operation of Glen Canyon Dam, Draft Environmental Impact Statement 3 (1993). The Bureau of Reclamation's "preferred alternative" in the draft Glen Canyon Dam Environmental Impact Statement is similar to the interim operating criteria.

¹² The program is described at <https://www.usbr.gov/uc/progact/amp/index.html>.

¹³ A discussion of the 2018 release is provided at <https://www.usbr.gov/uc/rm/gcdHFE/>.

¹⁴ For background on LTEMP, see <http://ltempeis.anl.gov/eis/>.

¹⁵ See <http://ltempeis.anl.gov/eis/>.

¹⁶ U.S. Department of the Interior, Record of Decision for the Glen Canyon Dam Long-Term Experimental and Management Plan Final Environmental Impact Statement, December 2016. The ROD is available online at http://ltempeis.anl.gov/documents/docs/LTEMP_ROD.pdf.

¹⁷ <http://www.lcrmscp.gov/>.

as a habitat conservation plan under the ESA.[■] The program includes lengthy lists of conservation measures for implementation, subject to adjustment under principles of adaptive management. Half of the funding comes from the U.S., with the remainder apportioned among the 3 Lower Division states and other participants, including tribes.

The HCP calls for the creation of over 8,100 acres of habitat for fish and wildlife species, and the production of over 1.2 million native fish to augment existing populations. The plan will benefit at least 27 species, most of which are state or federally listed endangered, threatened, or sensitive species. An important feature of the program is the establishment of “conservation areas” along the river that restore and maintain needed habitat for protected species.[■] A program fact sheet provides the following summary of accomplishments as of 2018:

Through fiscal year 2018, 14 conservation areas have been created and a total of 6,049 acres of land cover have been established. This includes 4,054 acres of cottonwood-willow, 1,539 acres of mesquite, 361 acres of marsh, and 95 acres of backwater. Over 293,000 razorback suckers and bonytail have been stocked into the LCR below Davis Dam with more than 126,000 razorback suckers stocked into Lake Mohave as genetic refugia for this species.[■]

IV. Tribes and Water in the Colorado River Basin.

A. Introduction.

There are 27 Indian reservations with more than 30 tribes or colonies located within the Colorado River Basin.[■] See Table 6. The tribes on these reservations hold rights to use about 20% of the water added to the Colorado River Basin annually, and are likely to see that share increase as additional rights are quantified.[■] Because total annual consumptive uses and losses in the basin already exceed the annually-added

[■] As stated in the program’s website, “Implementation of the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) is guided by the Program Documents. These documents provide the legal framework for implementation activities. The Program Documents include the Habitat Conservation Plan (HCP), the Biological Assessment, the Programmatic Environmental Impact Statement/Environmental Impact Report (EIS/EIR), the Record of Decision, the Funding and Management Agreement, the Implementing Agreement, the Biological Opinion, and the Section 10 Permit.” https://www.lcrmscp.gov/steer_committee/regulatory_compliance.html.

[■] https://www.lcrmscp.gov/restoration/cons_areas.html.

[■] https://www.lcrmscp.gov/outreach/gen_prog_fact_sheet.pdf.

[■] Jesse Jankowski, Native American Tribal Water Rights in the Colorado River Basin 4 (2018), available online at <https://watershed.ucdavis.edu/education/classes/files/content/page/Ecogeomorphology.PaperRevised.JesseJankowski.pdf>. The Bureau of Reclamation identified 22 reservations in its 2012 study. Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, Table C9-2 (2012).

[■] Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification at C9-1 (2012). The Ten Tribes Water Study determined that “Partnership Tribes have reserved water rights, including unresolved claims, to divert nearly 2.8 million acre-feet per year (AFY) of water from the Colorado River and its tributaries. In the Upper Basin, Partnership Tribes have Federal Indian reserved diversion rights of 1,060,781 AFY and unresolved diversion claims of 762,345 AFY. In the Lower Basin, the Partnership Tribes have decreed diversion rights to Colorado River water of 952,190 AFY and unresolved diversion claims of 22,928 AFY (footnotes omitted).” Colorado River Basin Ten Tribes Partnership Tribal Water Study, 5.11.1 (December 2018). The

supply of water, a gap that is projected to increase over time,[■] these substantial tribal rights and the manner in which they are used are critical to water management in the Colorado River Basin.

TABLE 6
INDIAN TRIBES WITHIN THE COLORADO RIVER BASIN

States	Indian Community	Indian Population	Land Area (gross acreage)
AZ	Chemehuevi	345	30,803.2
CA	Cocopah Reservation	1,025	6,412.8
AZ	Colorado River	9,201	276,620.8
AZ, CA	Fort Apache	12,429	1,681,670.4
AZ	Fort McDowell	824	24,672
AZ	Fort Mojave	813	33,228.8
AZ, CA, NV	Fort Yuma (Quechan)	2,376	44,032
AZ	Gila River	11,257	373,600
AZ	Havasupai	503	176,736
AZ	Hopi	6,815	1,620,134.4
AZ	Hualapai	1,353	122,022.4
AZ	Jicarilla Apache	2,755	872,992
NM	Kaibab	196	120,800
AZ	Las Vegas Colony	108	3,961.6
NV	Maricopa (Ak-Chin)	752	21,075.2
AZ	Moapa River	206	71,660.8
NV	Navajo	155,214	14,191,129
AZ, NM, UT	Paiute	270	32,640
UT	Pascua Yaqui	3,315	1,196.8
AZ	Salt River	6,405	51,814.4
AZ	San Carlos Apache	9,385	1,862,854
AZ	Southern Ute	11,159	677,625.6
CO	Tohono O'odham Nation (Papago)	10,483	2,850,067.2
AZ	Uintah & Ouray	19,182	4,331,449.6
UT	Ute Mountain	1,687	569,030.4
CO, NM, UT	Yavapai Prescott	182	1,414.4
AZ	Zuni Pueblo	7,758	420,582.4
NM, AZ	TOTAL:	275,998	30,470,222

Source: U.S. Census Bureau, Population, Housing Units, Area, and Density 2000, American Indian Reservations.

This section explores tribal water rights and uses in the basin, the unique nature of tribal rights, and the challenges involved in putting these rights to use. The section

study provides considerable additional information respecting the water rights, water uses, and future plans for these 10 tribes.

[■] Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, SR-34 (2012).

begins with a discussion of the nature of tribal reserved water rights. It then summarizes the current situation for each of the basin tribes, using the organization of tribes with reservations located along the Colorado River mainstem in the Lower Basin, tribes with reservations in Arizona within the Gila River Basin, and tribes with reservations predominately or totally in the Upper Basin.■

B. Tribal Water Rights.

The settlement of Indian tribes onto specified areas of land across the West, including in the Colorado River Basin, marked a major change of life for most of the tribes, one that required developing the means of sustenance primarily from these lands and whatever resources they provided. It was widely expected that tribes would take up agriculture. Agriculture in turn would require water for irrigation. Yet no express provision was made to establish legal rights for tribes to divert and use water.

During this same period in which tribes agreed to settle on reservations, non-Indians began moving onto other federal lands, often for the purpose of farming.■ Initially they simply took the water they needed from nearby streams and placed it to use, a practice subsequently codified under state law as legally establishing rights to use the water.■ Because states adopted a seniority system (prior appropriation), the first to put water from a stream to beneficial use obtained first rights each year to take the full amount of their appropriation. By the time the Indian Service and tribes got around to developing the water that would be needed to irrigate crops on reservation, nearby streams often had already been appropriated under state law.■

This very situation presented itself to the U.S. Supreme Court in the 1908 case of *Winters v. United States*.■ The Court responded to this dilemma by deciding that water rights for tribes had in fact been created at the time a reservation with a need for water was established.■ These rights existed as a matter of necessity and as an implied understanding between the tribes and the United States.■ Their “priority” dated from the time a reservation was established; rights established under state law prior to the establishment of a reservation would be “senior” to tribal rights, but rights established

■ This is the organization used in the Reclamation study, Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification (2012).

■ John Shurts, *Indian Reserved Water Rights: The Winters Doctrine in Its Social and Legal Context, 1880s-1930s* (2000).

■ Lawrence J. MacDonnell, *Prior Appropriation: A Reassessment*, 19 U. Den. Water L. Rev. 228 (2015).

■ See, e.g. *Winters v. United States*, 207 U.S. 564 (1908). For an excellent treatment of this case, what prompted it, and its aftermath, see John Shurts, *Indian Reserved Water Rights: The Winters Doctrine in Its Social and Legal Context, 1880s-1930s* (2000).

■ 207 U.S. 564 (1908).

■ *Winters v. United States*, 207 U.S. 564, 575–76 (1908).

■ *Winters v. United States*, 207 U.S. 564, 576 (1908).

subsequent to the reservation would be “junior” to tribal rights.¹⁹⁹ Tribal rights exist independent of state law, including the state-defined definition of beneficial use.²⁰⁰ They are not subject to abandonment or forfeiture as are prior appropriation water rights.²⁰¹ They are to be quantified on the basis of the uses suggested under the treaty or executive order establishing the reservation as necessary to make reservation lands a permanent homeland for tribal members.²⁰² The specific quantity of water available for use under the tribal water rights is based on the reasonable needs associated with these uses.²⁰³ If the use suggested by the treaty is to irrigate reservation lands, then the quantity may be determined by the total amount of water that must be applied to all “practicably irrigable” reservation lands to successfully grow crops.²⁰⁴ Thus, tribal reserved water rights exist as a matter of federal law, independent of state law and water rights established under state law.

C. Tribal Rights for Reservations along the Colorado Mainstream in the Lower Basin.

While the *Winters*’ decision made clear the existence of tribal reserved water rights, this basis for asserting water rights for specific reservations was used primarily in the early years to defend tribal water needs that could not be satisfied under state law.²⁰⁵ The first comprehensive assertion of tribal reserved water rights under *Winters* occurred when Arizona brought an original action in 1952 in the U.S. Supreme Court seeking to quiet title to its rights to use water from the Colorado River. The United States intervened to represent its many interests, including those of tribes with reservations in the Lower Basin.²⁰⁶ In its brief supporting its motion for intervention, the United States noted that the 1922 Colorado River Compact, which divided the consumptive use of basin water evenly between users north (Upper Basin) and south (Lower Basin) of the Lee Ferry dividing point, contained a provision making clear that tribal rights were not

¹⁹⁹ *Winters v. United States*, 207 U.S. 564, 576 (1908).

²⁰⁰ *Winters v. United States*, 207 U.S. 564, 577 (1908). *See, e.g.*, Report of the Special Master, *Arizona v. California*, at 310: “The fundamental nature of a reserved water right is that it is fully vested at the time of its creation; nothing further need be done to perfect it. It differs radically from appropriative rights under state law, which may be initiated by a filing but which must be perfected by actual diversion and beneficial use of water within a reasonable time after the filing.”

²⁰¹ *Winters v. United States*, 207 U.S. 564, 577 (1908). *See also* *United States ex rel. Ray v. Hibner*, 27 F.2d 909, 912 (D. Idaho 1928).

²⁰² *Winters v. United States*, 207 U.S. 564, 576 (1908).

²⁰³ *Winters v. United States*, 207 U.S. 564, 576 (1908).

²⁰⁴ This measure of the right was adopted by the U.S. Supreme Court in *Arizona v. California*, 373 U.S. 546, 600–01 (1963).

²⁰⁵ As John Shurts makes clear in *Indian Reserved Water Rights: The Winters Doctrine in Its Social and Legal Context, 1880s-1930s*, at 181–222 (2000), the *Winters* doctrine of reserved water rights was employed numerous times by the U.S. in legal processes concerning the protection of tribal water rights when those rights would be undermined by the application of state water law.

²⁰⁶ *Arizona v. California*, 344 U.S. 919 (1953).

affected by the Compact.²⁰³ The United States asserted that already about 750,000 acre-feet was being diverted annually for use on reservations located along the main Colorado and its tributaries, and that there were additional tribal claims for use that should be determined.²⁰⁴ Because all claims to the right to use the water in the Lower Basin far exceeded the amount allocated for use under the 1922 Compact, the United States sought to have its rights determined in this litigation.²⁰⁵

A year later the United States submitted a petition to the Court more fully explaining the interests it sought to protect in the litigation.²⁰⁶ An appendix to this petition set forth claims for four reservations located along the Colorado mainstem, nine reservations located within the Gila River Basin in Arizona, two reservations in the Little Colorado River, and three reservations located on other minor tributaries.²⁰⁷ In total, these claims—which included existing uses—totaled 1,747,250 acre-feet of diversion rights.²⁰⁸

Six years later, the United States submitted proposed findings of fact and conclusions of law to the Special Master in which it identified lands suitable for irrigation on all Indian reservations located within the geographic Lower Basin, and specified the diversion of water necessary annually to grow crops and raise livestock on these lands.²⁰⁹ The United States separated its treatment according to location and source of supply: reservations above Lake Mead, reservations in the Gila River Basin, and reservations below Lake Mead.²¹⁰ In total, it determined these lands had an annual consumptive use requirement of about 900,000 acre-feet.²¹¹

²⁰³ State of Arizona v. State of California, Motion on Behalf of the United States of America for Leave to Intervene and Brief in Support of Motion, December 31, 1952, at 13. Colorado River Compact, Art. VII (“Nothing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes”).

²⁰⁴ State of Arizona v. State of California, Motion on Behalf of the United States of America for Leave to Intervene and Brief in Support of Motion, December 31, 1952, at 13–14.

²⁰⁵ State of Arizona v. State of California, Motion on Behalf of the United States of America for Leave to Intervene and Brief in Support of Motion, December 31, 1952, at 15–16. The Court granted intervention on January 19, 1953. *Arizona v. California*, 344 U.S. 919 (1953).

²⁰⁶ Petition of Intervention on Behalf of the United States of America, December 1953.

²⁰⁷ Petition of Intervention on Behalf of the United States of America, Appendix II, 56–57, December 1953.

²⁰⁸ Petition of Intervention on Behalf of the United States of America, Appendix II, 57, December 1953.

²⁰⁹ Findings of Fact and Conclusions of Law Proposed by the United States of America, *Arizona v. California*, No. 9 Original, 1959 Term, at 51–125. “The lands on each of the Reservations which are susceptible of irrigation from existing irrigation systems or extensions thereof or additional systems have been carefully classified for suitability for irrigation according to depth, texture and permeability of soil and subsoil, slope, erosion, drainage, salinity, and alkalinity.” *Id.*, Finding 4.0.2, at 51.

²¹⁰ It apparently followed this organization because the sources of water would be different and because there appears to have been some question about the authority of the United States to deliver water from Lake Mead to downstream reservations.

²¹¹ Findings of Fact and Conclusions of Law Proposed by the United States of America, *Arizona v. California*, No 9 Original, 1959 Term, at 51–125.

In his final report, issued in 1960, Special Master Simon Rifkind gave extensive treatment to all Indian Reservations located within the Lower Basin.²²² The Special Master decided, however, to address only the claims for tribes along the Colorado mainstem rather than the claims for all reservations in the Lower Basin.²²³ Nevertheless, he fully supported the existence of tribal reserved water rights, the ability for such rights to exist independent of state law, the establishment of the rights at the time the reservation was set aside, and the potential that these rights might override uses established under state law subsequent to the formation of the reservation.²²⁴ With respect to five reservations located along the main Colorado River in the Lower Basin, the Master found that the United States and the tribes intended to reserve such water rights.²²⁵ He further determined that the needs for water included both present and future interests and accepted the use of practicably irrigable acreage as the best means of quantifying the amount of water reserved.²²⁶ He determined that tribal uses of water under these rights must be accounted within the apportionments made to the states within which the reservations are located.²²⁷ In addition, he decided that the full extent of tribal reserved rights associated with reservations established prior to enactment of the Boulder Canyon Project Act (1929) constituted “present perfected rights” that are not affected by the allocations made under the 1922 Colorado River Compact or the Boulder Canyon Project Act.²²⁸

In 1963, the U.S. Supreme Court issued its decision in this landmark case.²²⁹ Among other matters, the Court determined that Indians on five reservations located along the Colorado River had rights to divert and use about 950,000 acre-feet of water from the river annually.²³⁰ The reservations are the Chemehuevi, the Cocopah, Ft. Yuma

²²² Report of the Special Master, *Arizona v. California*, at 80–93. His discussion uses the organization of tribes located in the Little Colorado drainage, tribes along or near the main Colorado River, and tribes located in the Gila River basin. He also discusses the Coachella Indian Reservation, located outside the hydrologic basin but near lands irrigated with water from the Colorado River. *Id.* at 94.

²²³ Report of the Special Master, *Arizona v. California*, at 251. Because the Master determined that Congress had made an apportionment of the water of the main Colorado River in the Boulder Canyon Project Act, he declined to make an equitable apportionment of tributaries in the Lower Basin, except in the interstate reach of the Gila in which he determined an equitable apportionment was necessary. *Id.* at 318, 323 (tributaries other than Gila), 325 (Gila).

²²⁴ Report of the Special Master, *Arizona v. California*, at 257–59.

²²⁵ Report of the Special Master, *Arizona v. California*, at 260.

²²⁶ Report of the Special Master, *Arizona v. California*, at 260–65.

²²⁷ Report of the Special Master, *Arizona v. California*, at 247–48.

²²⁸ Report of the Special Master, *Arizona v. California*, at 309–10. “The fundamental nature of a reserved water right is that: it is fully vested at the time of its creation; nothing further need be done to perfect it. It differs radically from appropriative rights under state law, which may be initiated by a filing but which must be perfected by actual diversion and beneficial use of water within a reasonable time after the filing. Thus a reserved water right created before June 25, 1929, is, by its very nature, ‘perfected’ as of that date.” *Id.* at 310.

²²⁹ *Arizona v. California*, 373 U.S. 546 (1963).

²³⁰ *Arizona v. California*, 373 U.S. 546, 600 (1963). The 1963 decision, *Arizona v. California*, used the

(Quechan), Ft. Mohave, and the Colorado River Indian Reservation. The Court reinforced the doctrine of tribal reserved water rights as outlined initially in *Winters*.²²¹ It affirmed the Master's determination that reservations established under executive order can also be the basis for the creation of tribal reserved rights, and that such rights established for Indian reservations created prior to the Boulder Canyon Project Act enjoy the status of present perfected rights.²²² Finally, the Court accepted the use of the amount of water need to grow crops on all irrigable within a reservation as the measure of the reserved right.²²³

In 1964, the Court entered a decree in the form of an injunction fixing the priorities and the quantities for the five Indian reservations.²²⁴ The decree fixes maximum amounts of water divertible from the Colorado River for each reservation, but also authorizes consumptive use based on the number of irrigable acres, stating that the lesser of these two measures is the amount of water available to each reservation.²²⁵

In 1979, the Court entered a supplemental decree listing those holding present perfected rights and fixing the quantity of those rights.²²⁶ The five Indian reservations are placed first in line for satisfaction of their rights in the event there is insufficient water to satisfy all parties holding present perfected rights.²²⁷ Moreover, the decree makes clear that uses of water made available as reserved rights are not limited to irrigation or other strictly agricultural use.²²⁸

In 1983, the Court allowed tribes from the five reservations to intervene in the case for the purpose of litigating the issue of accurate boundaries for the reservations.²²⁹ In

standard of the amount of water necessary to irrigate all practicably irrigable lands within the reservations, calculating that need at about 950,000 acre-feet on the approximately 143,000 acres of irrigable reservation land. At the time these reservations were formalized or enlarged (between 1865 and 1917), it was expected that the tribes would pursue irrigated agriculture as the basis of their economy. Irrigation today accounts for the large majority of the present water use on these reservations.

²²¹ Arizona v. California, 373 U.S. 546, 599–600 (1963).

²²² Arizona v. California, 373 U.S. 546, 599–600 (1963).

²²³ Arizona v. California, 373 U.S. 546, 600–01 (1963).

²²⁴ Arizona v. California, 376 U.S. 340 (1964).

²²⁵ Thus, for example, the Chemehuevi Reservation is authorized to divert a maximum of 11,340 acre-feet per year from the Colorado or the consumptive use amount necessary to grow crops on 1,900 acres, with a priority date of February 2, 1907. Arizona v. California, 376 U.S. 340, 344 (1964).

²²⁶ Arizona v. California, 439 U.S. 419 (1979). Diversion amounts per irrigable acre are fixed for each reservation. *Id.* at 422.

²²⁷ Arizona v. California, 439 U.S. 419, 421–22 (1979).

²²⁸ Arizona v. California, 439 U.S. 419, 422 (1979) (“The foregoing reference to a quantity of water necessary to supply consumptive use required for irrigation, and as that provision is included within paragraphs (1) through (5) of Art. II(D) of said Decree, shall constitute the means of determining quantity of adjudicated water rights but shall not constitute a restriction of the usage of them to irrigation or other agricultural application.”). The decree specifies that the consumptive use associated with other than irrigation uses cannot exceed the consumptive use that would have resulted from irrigation use. *Id.*

²²⁹ Arizona v. California, 460 U.S. 605, 615 (1984). Previous efforts by tribes to gain party status had failed. Here the Court decided “the Indians’ participation in litigation critical to their welfare should not

its 1963 decision, the Court had rejected the Master's recommendations regarding resolving the boundaries of two of the reservations.²⁰⁰ Now the Court decided that the boundary issues raised for all five of the reservations should be determined.²⁰¹ In 2000, the Court issued another supplemental decree finalizing a negotiated settlement concerning the claims of the Ft. Mohave and Colorado River reservations.²⁰² Most recently, in 2006 the Court issued a consolidated decree incorporating in a single document the changes made to the 1964 decree in the various proceedings.²⁰³ Table 7 summarizes the rights associated with each reservation and their priority dates. Table 8 summarizes the diversion rights and current uses for four of these reservations as reported in the Tribal Water Study.

TABLE 7

DECREED RIGHTS FOR FIVE RESERVATIONS ALONG THE COLORADO RIVER IN THE LOWER BASIN (*ARIZONA V. CALIFORNIA*)

Reservation	Quantity of Water (af/yr)	Priority Date
Chemehuevi	11,340 acre-feet of diversions or quantity of mainstream water necessary to supply the consumptive use required for irrigation of 1,900 acres	February 2, 1907
Cocopah	10,847 acre-feet of diversions or quantity of mainstream water necessary to supply the consumptive use required for irrigation of 1,524 acres	September 27, 1917, for lands reserved by the Executive Order of said date; June 24, 1974, for lands reserved by the Act of June 24, 1974
Fort Yuma-Quechan	77,966 acre-feet of diversions or quantity of mainstream water necessary to supply the consumptive use required for irrigation of 11,694 acres	January 9, 1884

be discouraged.” *Id.* (footnote omitted). However, it rejected efforts by the tribes to include so-called “omitted lands” within the lands determined to be practicably irrigable in the 1964 decree. 460 U.S. at 617–26.

²⁰⁰ *Arizona v. California*, 373 U.S. 546, 601 (1963).

²⁰¹ *Arizona v. California*, 460 U.S. 605, 628–41 (1984).

²⁰² *Arizona v. California*, 531 U.S. 1 (2000).

²⁰³ *Arizona v. California*, 547 U.S. 150 (2006).

Reservation	Quantity of Water (af/yr)	Priority Date
Colorado River	719,248 acre-feet of diversions or quantity of mainstream water necessary to supply the consumptive use required for irrigation of 107,903 acres	March 3, 1865, for lands reserved by the Act of March 3, 1865; November 22, 1873, for lands reserved by the Executive Order of said date; November 16, 1874; May 15, 1876, for lands reserved by the Executive Order of said date; November 22, 1915, for lands reserved by the Executive Order of said date
Fort Mohave	132,789 acre-feet of diversions from the mainstream or quantity of mainstream water necessary to supply the consumptive use required for irrigation of 20,544 acres	September 19, 1890, for lands transferred by the Executive Order of said date; February 2, 1911, for lands reserved by the Executive Order of said date

TABLE 8
DIVERSION RIGHTS AND CURRENT USE

Reservation	Total Diversion Rights (af/yr)	Current Diversions (af/yr)
Chemehuevi	11,340	307
Cocopah	10,847	6,973
Colorado River	662,402-Az 56,846-Ca	640,981-Az 4,867-Ca
Fort Mohave	12,534-Nev 103,535-Az 16,720-Ca	4,721-Nev 65,722-Az 15,175-Ca
Fort Yuma-Quechan	6,350-Az 64,616/71,616-Ca	1,554-Az 60,092-Ca

Source: Colorado River Basin Ten Tribes Partnership Tribal Water Study, Chapter 5 (December 2018).

D. Tribal Water Rights in the Gila Basin.

There are eleven tribes with reservations located within the Gila River Basin in central and southern Arizona.²⁹⁴ Most of these tribes now hold quantified water rights, established through congressionally-approved settlement agreements, and are seeking to put these rights to use. Settlement acts for basin tribes are summarized in Table 9. These settlements have been made possible by the existence of the Central Arizona

²⁹⁴ These tribes are the Ak Chin Indian Community, Fort McDowell Yavapai Nation, Gila River Indian Community, Pascua Yaqui Tribe, Salt River Pima Maricopa Indian Community, San Carlos Apache Tribe, Tohono O'odham Nation, Tonto Apache Tribe, White Mountain Apache Tribe, Yavapai-Apache Nation, and Yavapai-Prescott Tribe.

Project,²⁸⁹ and through contracts for use of CAP and other water authorized under these settlement agreements.²⁹⁰

TABLE 9
INDIAN WATER RIGHTS SETTLEMENTS (GILA BASIN)

Year	Settlement Act	State	Tribe(s)	Water allocated (af/y)	Federal contribution (\$ in millions)
1978 (1984, 1992, 2000)	Ak-Chin Indian Water Rights Settlement Act, P.L. 95-328 (P.L. 98-530, P.L. 102-497, P.L. 106-285)	AZ	Ak-Chin Indian Community of Papago Indians of the Maricopa	75,000 from CAP plus up to 10,000 surplus	\$101.1
1982 (1992)	Southern Arizona Water Rights Settlement Act, P.L. 102-497	AZ	San Xavier and Schuk Toak Districts, Tohono O'odham Nation	37,800 from CAP 10,000 groundwater 28,200 reclaimed water	\$39.8
1988	Salt River Pima-Maricopa Indian Community Water Rights Settlement Act of 1988, P.L. 100-228	AZ	Salt River Pima-Maricopa Indian Community of the Salt River Reservation	122,400 from various sources, including 13,300 from CAP	\$47.5
1990 (2006)	Fort McDowell Indian Community Water Rights Settlement Act of 1990, P.L. 101-628 (P.L. 109-373)	AZ	Fort McDowell Indian Community	36,350	\$23.0

²⁸⁹ There is no little irony in the fact that the CAP has been an enormous benefit for many tribes with reservations in central and southern Arizona. But for the financial difficulties encountered in repaying less than half the full cost of the project (taxpayers paid the rest), it is unlikely that these tribes would have obtained the quantities of water they now possess, nor the funds needed to be able to put this water to beneficial use on reservation. Nevertheless, these tribes have achieved the promise of the *Winters* doctrine—use and benefit from the water necessary to sustain tribal homelands. In the words of longtime Arizona water lawyers, John Weldon and Lisa McKnight, “. . . the crowning achievement of the CAP may have been its pivotal role in the settlement of tribal water rights claims based on the federal reserved rights doctrine.” John B. Weldon, Jr. & Lisa M. McKnight, *Future Indian Water Settlements in Arizona: The Race to the Bottom of the Waterhole?*, 49 Ariz. L. Rev. 441, 442 (2007).

²⁹⁰ The Central Arizona Project (CAP) lifts about 1.6 million acre-feet of water annually 800 feet out of the Colorado River and carries this water hundreds of miles and another thousand feet to users in the Phoenix and Tucson areas. The rights to use 46% of that water are held by Indian tribes with reservations in these areas of Arizona.

Year	Settlement Act	State	Tribe(s)	Water allocated (af/y)	Federal contribution (\$ in millions)
1992 (1994, 1997, 2004)	San Carlos Apache Tribe Water Rights Settlement Act, P.L. 102-575 (P.L. 103-435, P.L. 105-18, P.L. 108-451)	AZ	San Carlos Apache Indian Tribe	67,965	\$41.4
1994	Yavapai-Prescott Indian Tribe Water Rights Settlement Act of 1994, P.L. 103-434 (P.L. 104-91)	AZ	Yavapai-Prescott Indian Tribe	1,550	\$0.2
2004	Arizona Water Rights Settlement Act of 2004, P.L. 108-451	AZ	Gila River Indian Community, Tohono O'Odham Nation	653,500	\$2,328.3
2010	White Mountain Apache Tribe Water Rights Quantification Act of 2010, P.L. 111-291	AZ	White Mountain Apache Tribe	99,000	\$327.2
2014	Bill Williams River Water Rights Settlement Act of 2014, P.L. 113-223	AZ	Hualapai Tribe	4,000 CAP Non-Indian Ag	

Source: Congressional Research Service, Indian Water Rights Settlements (2019), Table 1.

As we have seen, the Special Master decided not to determine the claims presented by the United States in *Arizona v. California* for tribal reserved water rights for reservations in the Lower Basin other than along the main Colorado River.²⁰⁷ The United States had presented claims for 25 reservations, so 20 reservations in the Lower Basin—including those within the Gila—remained with unresolved reserved water rights claims.²⁰⁸ Claims for the 11 reservations within the Gila included 99,244 acres of irrigable lands and total diversions of over 1.4 million acre-feet of water.²⁰⁹ As described by the United States, on-reservation uses of water at that time represented only a small portion of this amount.²¹⁰

²⁰⁷ See *supra* § IV.C, paragraph discussing Special Master Simon Rifkind's final report issued in 1960.

²⁰⁸ Findings of Fact and Conclusions of Law Proposed by the United States of America, *Arizona v. California*, No. 9 Original, 1959 Term, at 51.

²⁰⁹ Findings of Fact and Conclusions of Law Proposed by the United States of America, *Arizona v. California*, No. 9 Original, 1959 Term, at 95–125. By far the largest claim was for the Gila River Indian Community.

²¹⁰ Findings of Fact and Conclusions of Law Proposed by the United States of America, *Arizona v. California*, No. 9 Original, 1959 Term, at 95–125.

Arizona v. California had reinforced the existence of tribal reserved water rights and, with its use of practicably irrigable acreage as the quantification method, had indicated that satisfaction of these rights would involve the commitment of large amounts of water. In the 1970s, non-tribal water users filed petitions with the State of Arizona to establish a general adjudication proceeding for the Gila River Basin.²⁰⁰ In 1979, several tribes with reservations in the Gila filed an action in federal district court seeking determination of their reserved rights.²⁰¹ This case reached the U.S. Supreme Court in 1983, and resulted in a decision that their tribal reserved water rights should be determined in state general adjudication proceedings.²⁰² The determination of tribal reserved water rights by the Wyoming Supreme Court in 1988, however, suggested that tribes might have a difficult time in state general adjudication proceedings.²⁰³ Consequently, tribes began to pursue negotiated settlements rather than court adjudications as a better means of realizing the benefits of their reserved water rights.²⁰⁴

The first tribe to follow the settlement route was the Ak Chin Indian Community, a reservation established south of Phoenix for bands of Pima and Papago Indians.²⁰⁵ Rapidly declining groundwater resources upon which their irrigated agriculture depended forced tribal members to seek other water supplies. The U.S. agreed in 1978 and 1984 to provide other supplies.²⁰⁶

²⁰⁰ The Salt River Valley Water Users' Association filed a petition with the State in 1974 to adjudicate water rights in the Salt River. Scott B. McElroy and Jeff B. Davis, *Revisiting Colorado River Water*

Conservation District v. United States—There Must Be a Better Way, 27 Ariz. St. L.J. 597, 613 (1995). Subsequent petitions broadened the adjudication to the entire Gila River system.

²⁰¹ Scott B. McElroy and Jeff B. Davis, *Revisiting Colorado River Water Conservation District v. United States—There Must Be a Better Way*, 27 Ariz. St. L.J. 597, 613–14 (1995). The tribes included the San Carlos Apache Tribe, the Payson Community of Yavapai-Apache Indians, the Salt River Pima-Maricopa Indian Community, and the Fort McDowell Mohave-Apache Indian Community.

²⁰² *Arizona v. San Carlos Apache Tribe*, 463 U.S. 545 (1983).

²⁰³ *In re General Adjudication of All Rights to Use Water in the Big Horn River System*, 753 P.2d 76, 84 (Wyo. 1988). See also Lawrence J. MacDonnell, *General Stream Adjudications, the McCarran Amendment, and Reserved Water Rights*, 15 Wyo. L. Rev. 313 (2015).

²⁰⁴ For a good early discussion of this view, see Reid P. Chambers & John E. Echohawk, *Implementing the Winters Doctrine of Indian Reserved Water Rights: Producing Indian Water and Economic Development Without Injuring Non-Indian Water Users?*, 27 Gonz. L. Rev. 447, 447–48 (1992).

²⁰⁵ Bureau of Reclamation, *Colorado River Basin Water Supply and Demand Study*, Appendix C9, *Tribal Water Demand Scenario Quantification*, at C9-23 (2012).

²⁰⁶ Pub. L. No. 95-328, 92 Stat. 409 (1978); Pub. L. No. 98-530, 98 Stat. 2698 (1984). The Bureau of Reclamation summarized the ultimate settlement terms in this way:

Under the 1984 water rights settlement, the Ak-Chin Indian Reservation has the right to receive up to 75,000 afy of water at the southeastern corner of the reservation. When sufficient surface water is available in the CAP canal, the United States may deliver up to an additional 10,000 afy of water to the Ak-Chin Indian Reservation (maximum of 85,000 afy). In years of Colorado River shortage, the United States must pay damages if less than 72,000 afy is delivered to the Ak-Chin Indian Reservation. The United States acquired 50,000 afy of Colorado River water entitlement from the Yuma Mesa Division of the Gila Project to partially meet the requirement to deliver required quantities to the Ak-Chin Indian Reservation. After losses, 47,500 afy is delivered to the Ak-Chin

Satisfaction of tribal reserved rights had not been a consideration at the time Congress authorized the Central Arizona Project (CAP) in 1968.²⁰⁰ In 1976, however, Secretary of the Interior Kleppe decided to allocate 257,000 acre-feet of CAP water to five tribes.²⁰¹ This decision reflected the growing awareness of the need to address tribal reserved water rights. It also reflected the reality that the non-Indian irrigators, who originally were to be the primary beneficiaries of CAP water, could not afford to pay their allocated share of project costs.²⁰² Under federal law, the U.S. does not require repayment of that portion of Reclamation project construction costs associated with delivery of water to tribes.²⁰³ In 1980, the Secretary of the Interior expanded the allocation of water to tribes to 309,000 acre-feet and included seven additional tribes.²⁰⁴ Then, in 1983, the Secretary allocated about 639,000 acre-feet of CAP water to municipal and industrial users and gave tribal and M&I users first priority to project water.²⁰⁵

The availability of CAP water opened the door to additional tribal water settlements. The Southern Arizona Water Rights Settlement Act of 1982, and subsequent amendments, addressed the water rights of Tohono O’Odham Nation with both CAP Indian water and CAP agricultural water,²⁰⁶ and provided funding to construct and improve

Indian Community with a priority date that precedes the date of enactment of the Colorado River Basin Project Act, and therefore has a higher priority during times of shortage than other CAP water. Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-27 (2012). The settlement act was amended in 1990 to enable the Ak Chin to enter into leases of water in the Pinal, Phoenix, and Tucson Active Management Areas. Pub. L. No. 106-285, 114 Stat. 878 (2000).

²⁰⁰ For a useful history of the Central Arizona Project, see Rich Johnson, *The Central Arizona Project, 1918-1968* (1977).

²⁰¹ Bureau of Reclamation, *The Colorado River Documents* 2008, at 5-11.

²⁰² W. Michael Hanneman, *The Central Arizona Project*, Working Paper No. 937 (2002), at 3 (“The original plans had assumed that agriculture would receive 60–80% of CAP water, and had conceived CAP as a ‘rescue mission’ that would save Arizona agriculture from the growing problem of groundwater overdraft”). *See also* Bureau of Reclamation, *The Colorado River Documents* 2008, at 5-5 to 5-6.

²⁰³ Bureau of Reclamation, *The Colorado River Documents* 2008, at 5-6.

²⁰⁴ Bureau of Reclamation, *The Colorado River Documents* 2008, at 5-11 to 5-12.

²⁰⁵ Bureau of Reclamation, *The Colorado River Documents* 2008, at 5-5 to 5-12.

²⁰⁶ As determined by the Secretary of the Interior, long-term contracts for CAP water for tribes are given the same priority as long-term contracts for municipal and industrial uses. Department of the Interior, Office of the Secretary, *Central Arizona Project, Arizona; Water Allocations and Water Service Contracting*; Record of Decision, 48 Fed. Reg. 12446–03, 12449 (1983) (“During years of water supply shortages, Indian users and non-Indian M&I users would share a first priority on project water supplies”). Non-Indian agriculture is given a lower priority.

the infrastructure on reservation necessary to put water to irrigation use.²⁰⁰ Including groundwater, the Nation has rights to use 79,200 acre-feet per year.²⁰¹

The Salt River Pima-Maricopa Indian Community Water Rights Settlement Act of 1988 includes the 1980 allocation of CAP Indian water (13,300 acre-feet), and authorizes an exchange with seven nearby cities of water obtained from the Wellton-Mohawk Irrigation and Drainage District (22,000 acre-feet).²⁰²

The Fort McDowell Indian Community Water Rights Settlement Act of 1990²⁰³ provided for a total diversion right of 36,350 acre-feet. As finalized, the sources for this water involve a complex mix of leases and exchanges.²⁰⁴ The Nation has entered into a 100-year lease with the City of Phoenix for 4,300 acre-feet of this water.²⁰⁵

The San Carlos Apache Tribe Water Rights Settlement Act of 1992,²⁰⁶ as amended, includes CAP Indian water allocated in 1980, CAP M&I water previously allocated to other users, and potentially some “excess” water not delivered to the Ak Chin Indian Community.²⁰⁷ In total, 61,145 acre-feet of CAP water is allocated to the San Carlos Apache Tribe.²⁰⁸

The Yavapai-Prescott Indian Tribe Water Rights Settlement Act of 1994²⁰⁹ authorized the transfer of CAP Indian water allocated to the tribe (500 acre-feet) to be permanently assigned to the City of Scottsdale in return for the funds needed to provide water service to the reservation from the City of Prescott.²¹⁰ The Tribe also is authorized to develop groundwater underlying the reservation.

²⁰⁰ Bureau of Reclamation, The Colorado River Documents 2008, at 10-8 to 10-12. The Southern Arizona Water Rights Settlement Act of 1982, Pub. L. No. 97-293, Title III, 96 Stat. 1274 (1982); Southern Arizona Water Rights Settlement Amendments Act of 2004, Pub. L. No. 108-451, Title III, 118 Stat. 3536 (2004).

²⁰¹ Tohono O’Odham Settlement, Native American Water Rights Settlement Project, University of New Mexico Digital Repository, *available at* <https://digitalrepository.unm.edu/nawrs/49/>.

²⁰² Bureau of Reclamation, The Colorado River Documents 2008, at 10-13 to 10-14. Salt River Pima-Maricopa Indian Community Water Rights Settlement Act of 1988, Pub. L. No. 100-512, 102 Stat. 2549 (1988).

²⁰³ Pub. L. No. 101-628, Title IV, 104 Stat. 4480 (1990).

²⁰⁴ Tribal Water Use in the Colorado River Basin, Fort McDowell Indian Community, http://www.tribalwateruse.org/?page_id=162.

²⁰⁵ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-28 (2012).

²⁰⁶ Pub. L. No. 102-575, Title XXXVII, 106 Stat. 4740 (1992).

²⁰⁷ Bureau of Reclamation, The Colorado River Documents 2008, at 10-15 to 10-16.

²⁰⁸ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-30 (2012). The categories of CAP water are 12,700 acre-feet of Indian priority, 18,145 acre-feet of M&I priority, and 33,300 acre-feet from the Ak Chin settlement (water subordinate to delivery of water to Ak Chin Reservation). *Id.* In addition the Tribe is given use of storage capacity behind Coolidge Dam.

²⁰⁹ Pub. L. No. 103-434, 108 Stat. 4526 (1994).

²¹⁰ Bureau of Reclamation, The Colorado River Documents 2008, at 10-16 to 10-17.

Continuing difficulties with repayment for the construction costs of the CAP led to litigation in federal district court, a decision generally favorable to the Central Arizona Water Conservation District,²⁰⁰ and an appeal that resulted in a settlement.²⁰¹ Among other things, the settlement led to enactment of the Arizona Water Settlements Act (AWSA) of 2004.²⁰² This detailed statute, together with an implementing agreement, completed the redesign of CAP allocations, formalizing tribal rights to 46% of all project water, and redefining the repayment obligation for the remaining 54% of the water.²⁰³ Repayments to the U.S. go directly into the Lower Colorado River Basin Development Fund and are distributed back to specified beneficiaries in Arizona under two tiers of priorities spelled out in ASWA.²⁰⁴ Non-Indian agricultural uses now account for about 20% of CAP water.²⁰⁵ Only about 67,000 acre-feet of CAP water remains available to help settle other outstanding tribal water claims.²⁰⁶ Moreover, the ASWA directed that a maximum of \$250 million from CAP repayments can go into the Lower Basin Development Fund for future tribal water settlements.²⁰⁷

The Gila River Community is by far the largest Indian reservation in central Arizona, including an area of 377,000 acres.²⁰⁸ Initially, the United States and the Gila River Community claimed reserved water rights for 1.5 million acre-feet of water from the Gila and Salt Rivers, with a time immemorial priority date.²⁰⁹ Negotiations initiated in 1989 led to the Gila River Indian Community Water Rights Settlement Act of 2004, included in the Arizona Water Settlements Act.²¹⁰ The agreement provides for an expected average annual availability of about 650,000 acre-feet.²¹¹ The sources of

²⁰⁰ Central Arizona Water Conservation District v. United States, 32 F. Supp. 2d 1117 (D. Ariz. 1998).

²⁰¹ Bureau of Reclamation, The Colorado River Documents 2008, at 5-8 to 5-11.

²⁰² Pub. L. No. 108-451, 118 Stat. 3478 (2004).

²⁰³ Bureau of Reclamation, The Colorado River Documents 2008, at 10-5 to 10-6. Of the total of 1,415,000 acre-feet of Colorado River water allocated as part of the CAP, 650,724 acre-feet annually are controlled by tribes and Indian communities in Arizona. *Id.* at 10-6.

²⁰⁴ Bureau of Reclamation, The Colorado River Documents 2008, at 5-17 to 5-20.

²⁰⁵ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-26 (2012).

²⁰⁶ John B. Weldon, Jr. & Lisa M. McKnight, *Future Indian Water Settlements in Arizona: The Race to the Bottom of the Waterhole?* 49 Ariz. L. Rev. 441, 465 (2007).

²⁰⁷ John B. Weldon, Jr. & Lisa M. McKnight, *Future Indian Water Settlements in Arizona: The Race to the Bottom of the Waterhole?* 49 Ariz. L. Rev. 441, 465–66 (2007).

²⁰⁸ John B. Weldon, Jr. & Lisa M. McKnight, *Future Indian Water Settlements in Arizona: The Race to the Bottom of the Waterhole?* 49 Ariz. L. Rev. 441, 459 (2007).

²⁰⁹ John B. Weldon, Jr. & Lisa M. McKnight, *Future Indian Water Settlements in Arizona: The Race to the Bottom of the Waterhole?* 49 Ariz. L. Rev. 441, 459 (2007). The claims were made in the Gila River General Adjudication. Subsequently, the Community increased that claim to 2.7 million acre-feet. *Id.* at 459–60.

²¹⁰ John B. Weldon, Jr. & Lisa M. McKnight, *Future Indian Water Settlements in Arizona: The Race to the Bottom of the Waterhole?*, 49 Ariz. L. Rev. 441, 460 (2007). Pub. L. No. 108-451, Title II, 118 Stat. 3499 (2004).

²¹¹ John B. Weldon, Jr. & Lisa M. McKnight, *Future Indian Water Settlements in Arizona: The Race*

supply are a mix that includes 328,000 acre-feet of CAP water of different categories.²⁰⁰ The Settlement made available \$200 million to rehabilitate and expand existing irrigation infrastructure.²⁰¹ In addition, the Community is permitted to lease or exchange any of its water for up to 100 years for use in specified counties in Arizona.²⁰²

The White Mountain Apache Tribe resides on the 1.67 million acre Fort Apache Indian Reservation in east-central Arizona.²⁰³ The White Mountain Apache Tribe Water Rights Quantification Act of 2010²⁰⁴ established the tribe's right to 25,000 acre-feet of water from the Colorado River, identifying a number of sources and categories for this water.²⁰⁵ In addition, the Settlement Act gave the tribe authority to lease or exchange this water.²⁰⁶ In 2014, the Arizona Superior Court adjudicated rights to divert 71,000 acre-feet per year in the Gila and Little Colorado watersheds.²⁰⁷

The most recent settlements approved by Congress addressed the claims of the Hualapai Tribe.²⁰⁸ Under these agreements, the Hualapai are to receive 4,000 acre-feet of CAP non-Indian agricultural water that had been returned to the Secretary of the Interior and intended for use to resolve outstanding tribal water claims.²⁰⁹ In addition,

to the Bottom of the Waterhole?, 49 Ariz. L. Rev. 441, 460 (2007).

²⁰⁰ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-28 (2012) (“consisting of 120,600 afy of CAP NIA priority water, 191,200 afy of CAP Indian priority water, and 17,000 afy of CAP M&I priority water, contingent on the execution of an exchange and lease agreement with Asarco . . .”). The final accounting of sources of water for the Gila are provided in Amended and Restated Gila River Indian Community Water Rights Settlement Agreement Oct. 21, 2005, Amendment No. 2, 2007, available online at <https://digitalrepository.unm.edu/cgi/viewcontent.cgi?article=1028&context=nawrs>.

²⁰¹ John B. Weldon, Jr. & Lisa M. McKnight, *Future Indian Water Settlements in Arizona: The Race to the Bottom of the Waterhole?*, 49 Ariz. L. Rev. 441, 460 (2007).

²⁰² Gila Settlement Act, Section 204(b)(2). The counties are Maricopa, Pinal, Pima, La Paz, Yavapai, Gila, Graham, Greenlee, Santa Cruz, or Coconino. Section 205(a)(2)(A).

²⁰³ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-32 (2012).

²⁰⁴ Pub. L. No. 111-291, Title III, December 8, 2010.

²⁰⁵ Section 305 (b). The tribe was allocated 23,782 acre-feet of water from the CAP, primarily from non-Indian agricultural water. Section 305(b)(1)(A). The U.S. must “firm” 3,750 acre-feet of this water for 100 years to the status of M&I water, and the State of Arizona must firm another 3,750 acre-feet for 100 years, also to M&I status. In addition, the Settlement provides that another 1,218 acre-feet would come to the Tribe from water previously allocated to the Harquahala Valley Irrigation District previously converted to CAP Indian Priority Water. Section 305(b)(1)(B).

²⁰⁶ Section 305(b)(2). This applies only to users in Maricopa, Pinal, Pima, and Yavapai Counties. Section 306(a)(1)(A).

²⁰⁷ White Mountain Apache Water Rights Quantification Settlement Judgment and Decree, In Re General Adjudication of All Rights to Use Water in the Little Colorado River System and Source, No. cv. 6417-202 Superior Court of Apache County, Az. (18, Dec. 2014), available online at <https://digitalrepository.unm.edu/cgi/viewcontent.cgi?article=1095&context=nawrs>.

²⁰⁸ Bill Williams River Water Rights Settlement Act of 2014, Public Law 113-223, 128 Stat. 2096 (2014); Hualapai Tribe Water Rights Settlement Act of 2016, S. 3300, introduced in 114th Congress.

²⁰⁹ Hualapai Tribe Water Rights Settlement Agreement, Section 5.1.1 (“Hualapai Agreement”). The

the Act authorizes funding for, and construction of, the Hualapai Water Project, that will make available 3,414 acre-feet of water per year from the Colorado River for municipal, commercial and industrial uses on the Hualapai Reservation.²⁰⁰ In the settlement agreement, the Hualapai Tribe is given the authority to lease or exchange its water within the Lower Basin portion of Arizona.²⁰¹

The Pascua Yaqui Tribe, with its reservation in southern Arizona near Tucson, obtained a contract for 500 acre-feet of CAP water from the United States in 1980.²⁰² Tribal demands apparently exceed this amount, but the source of supply for this water has not yet been established.²⁰³ The Tonto Apache Tribe, located in eastern Arizona, also obtained a contract from the United States in 1980, this one for 128 acre-feet per year of CAP water.²⁰⁴ Because the reservation cannot be served directly from the CAP, this water will have to be made available by exchange.²⁰⁵ The Yavapai-Apache Tribe, located in central Arizona, also has a 1980 contract with the United States, for 1,200 acre-feet per year of CAP water.²⁰⁶ Again, because the reservation is outside of the CAP service area, an exchange will be necessary to be able to use this water.²⁰⁷

U.S. and the State of Arizona each are committed to firm 557.5 acre-feet of this water for 100 years. Section 5.4.

²⁰⁰ Hualapai Tribe Water Rights Settlement Act of 2016, S. 3300, introduced in 114th Congress, Section 103(a)(1).

²⁰¹ Hualapai Tribe Water Rights Settlement Agreement, at 5.6. The Tribe also is authorized to store its water with the Arizona Water Banking Authority. *Id.* at 5.7.

²⁰² Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-29 (2012).

²⁰³ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-29 (2012).

²⁰⁴ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-31 (2012).

²⁰⁵ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-31-32 (2012).

²⁰⁶ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-32 (2012).

²⁰⁷ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-32-33 (2012).

The water rights of the tribes in the Gila River Basin in central and southern Arizona are summarized in Table 10.

TABLE 10
WATER RIGHTS FOR TRIBES IN CENTRAL ARIZONA²⁰⁰

Tribe	Total Diversion Right (afy)	CAP Water By category	Other Sources of Water
Ak-Chin Indian Community	75,000	25,000 Indian priority	50,000 Colorado River Priority 3
Fort McDowell Yavapai Nation	36,350	4,300 Indian priority	Kent Decree: 7,060 afa; SRP, for general use: 4,730 afa; SRP, for exclusively non-agricultural use: 2,000 afa; Roosevelt Water Conservation District ("RWCD"): 3,200 afa but return flow factor of x 1.0526 means the total flow is 3,368 afa; Other water: 13,933 afa but return flow factor of x 1.0526 means the total flow is 14,666 afa. ²⁰¹
Gila River Indian Community	653,500	173,000 Indian; 102,000 NIA; 36,700 NIA; 17,000 M&I	125,000 Globe Decree; 5,900 Haggass Decree; 4,500 RWCD Surface; 20,000 SRP storage; 12,600 reclaimed
Hualapai Tribe	4,000	4,000 NIA priority	
Pascua Yaqui Tribe	500	500 Indian priority	
Salt River Pima Maricopa Indian Community	35,300	13,300 Indian priority	22,000 Colorado River Priority 3
San Carlos Apache Tribe	61,145 ²⁰²	12,700 Indian priority 18,145 M&I priority	33,300 Ak Chin Settlement

²⁰⁰ There are some inconsistencies among the sources about the extent of tribal water rights. Sources for the numbers cited in the tables are cited.

²⁰¹ Tribal Water Use in the Colorado River Basin, Fort McDowell Indian Community, http://www.tribalwateruse.org/?page_id=162.

²⁰² "In a normal water supply year on the Colorado River—i.e., when no more than 27,500 acre-feet of the original Ak-Chin allocation is needed for delivery to the Ak-Chin Indian Community—the San Carlos Apache Tribe allocation is 61,645 acre-feet. The former Phelps Dodge water and the former Globe water retain their original M&I CAP priority." United States Bureau of Reclamation, CAP Subcontracting

Tribe	Total Diversion Right (afy)	CAP Water By category	Other Sources of Water
Tohono O'Odham Nation	79,200	37,800 Indian priority; 28,200 NIA Priority; Schuk Toak: 10,800 Indian priority; 5,200 NIA	3,200 groundwater
Tonto Apache Tribe	128	128 Indian priority	
White Mountain Apache Tribe	96,000 ²⁰⁰	25,000 NIA	74,000 surface and groundwater from Salt and Little Colorado
Yavapai-Apache Nation	1,200	1,200 Indian priority	
Yavapai-Prescott Tribe	1,550	500 Indian priority	

Source: Data from Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C-9, unless otherwise specified.

E. Tribes and Water in the Upper Colorado River Basin and the Little Colorado River.

There are five tribes with reservations wholly or partially located in the Upper Colorado River Basin. Four of the tribes—Jicarilla Apache, Southern Ute, Ute Mountain Ute, and Navajo—are party to water settlements that quantify at least some of their rights, and establish legal rights to divert and use the water from specified sources. One of the tribes—the Ute Indian Tribe of the Uintah and Ouray Reservation—is party to a long-pending settlement agreement. In the Little Colorado Basin, the claims of the Zuni Indian Tribe were addressed in a settlement act, but the claims of the Navajo and Hopi remain outstanding. Table 11 summarizes Congressionally-approved settlements in these parts of the Colorado River basin. We begin with the Upper Basin and the Jicarilla Apache Tribe.

Status Report, October 1, 2012, *available at* www.usbr.gov/lc/phoenix/reports/capgilbert/EAGilbertCAPlease.pdf.

²⁰⁰ White Mountain Apache Water Rights Quantification Settlement Judgment and Decree, In Re General Adjudication of All Rights to Use Water in the Little Colorado River System and Source, No. CV 6417-202, Superior Court of Apache County, AZ (Dec. 18, 2014).

TABLE 11
INDIAN WATER RIGHTS SETTLEMENTS
(UPPER BASIN AND LITTLE COLORADO)

Year	Settlement Act	State	Tribe(s)	Water allocated (af/y)	Federal contribution (\$ in millions)
1988 (2000)	Colorado Ute Water Rights Settlement of 1988, P.L. 100-585 (P.L. 106-554)	CO	Southern Ute, Ute Mountain Ute Tribes (and Navajo Nation)	Southern Ute: 29,900 from Animas-LaPlata, 10,000 from reservation sources; Ute Mountain Ute: 25,100 from Dolores project 33,000 from Animas-LaPlata	\$49.5
1992 (1998)	Jicarilla Apache Tribe Water Settlement Act of 1992, P.L. 102-441 (P.L. 105-256)	NM	Jicarilla Apache Indian Tribe	40,000	\$6.0
1992	Ute Indian Rights Settlement Act of 1992, P.L. 102-575 (not yet accepted by tribe)	UT	Northern Ute Indian Tribe; Ute Indian Tribe of the Uintah and Ouray Reservation	481,035	\$198.5
2003	Zuni Indian Tribe Water Rights Settlement Act of 2003, P.L. 108-34	AZ	Zuni Indian Tribe	10,600	\$19.3
2009	Northwestern New Mexico Rural Water Projects Act (Navajo-Gallup Water Supply Project/ Navajo Nation Water Rights), P.L. 111-11	NM	Navajo Nation	535,330	\$984.1

Source: Congressional Research Service, Indian Water Rights Settlements (2019), Table 1.

The Jicarilla Apache Reservation is located in northwest New Mexico, at the headwaters of the San Juan River, a tributary of the Colorado, and the Rio Chama, a tributary of the Rio Grande.³⁰⁰ The Jicarilla Apache Tribe Water Rights Settlement Act

³⁰⁰ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9,

of 1992³⁰¹ authorized the Nation to divert up to 40,000 acre-feet per year from the San Juan River Basin, with the ability to deplete up to 32,000 acre-feet of this water.³⁰² In addition, the Nation may divert another 33,500 acre-feet either from Navajo Reservoir, or from the Navajo River as it crosses the reservation, with an authorized depletion of 25,500 acre-feet per year.³⁰³ The Settlement Agreement further authorized the Nation to divert and deplete an additional 6,500 acre-feet from the San Juan Basin through the San Juan-Chama Project.³⁰⁴ The Settlement also authorized the Nation to enter into subcontracts for use of tribal water off-reservation, authority the Nation has used to enter into agreements with the City of Santa Fe and with the Public Service of New Mexico for water delivery.³⁰⁵ The Nation also has held annual auctions to make its water available for other uses.³⁰⁶ The Tribal Water Study reported total diversion rights of 45,682 acre-feet and current diversions of 32,575 acre-feet.³⁰⁷

Settlement of the water claims for the lands in reservations in Colorado for the Southern Ute and the Ute Mountain Ute resulted from a transformation of a Bureau of Reclamation project, somewhat similar to the transformation of the Central Arizona Project.³⁰⁸ In this case, the project was the Animas-La Plata. Originally authorized by Congress in 1968 primarily as an irrigation project, it was reauthorized in 1988 as part of the Colorado Ute Indian Water Rights Settlement Act, and then further scaled back in a 2000 Amendment.³⁰⁹

The reservation for the Southern Ute Tribe is located in southwest Colorado.³¹⁰ The Ute Mountain Ute has a portion of its reservation in Colorado just to the west of the Southern Utes, with additional portions in Utah and New Mexico.³¹¹ The two tribes agreed to resolve their outstanding reserved water rights claims in an agreement with the State of Colorado and other parties in 1986,³¹² leading to enactment of the Colorado

Tribal Water Demand Scenario Quantification, at C9-10 (2012).

³⁰¹ Pub. L. No. 102-441, 106 Stat. 2237 (1992) (Settlement Act).

³⁰² Jicarilla Apache Tribe Water Rights Settlement Act of 1992, Pub. L. No. 102-441, 106 Stat. 2237 (1992), § 6(a).

³⁰³ Contract Between the United States and the Jicarilla Apache Tribe (Dec. 8, 1992), § 4.

³⁰⁴ Contract Between the United States and the Jicarilla Apache Tribe (Dec. 8, 1992), § 4.

³⁰⁵ Jicarilla Apache Tribe Water Rights Settlement Act of 1992, Pub. L. No. 102-441, 106 Stat. 2237 (1992), § 7.

³⁰⁶ Tribal Water Uses in the Colorado River Basin, Jicarilla Apache, available online at http://www.tribalwateruse.org/?page_id=116.

³⁰⁷ Colorado River Basin Ten Tribes Partnership Tribal Water Study, 5.4-7 (December 2018).

³⁰⁸ See *supra* § IV.D.

³⁰⁹ Colorado Ute Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-585, 102 Stat. 2973; Colorado Ute Indian Settlement Act Amendments of 2000, Pub. L. No. 106-554, 114 Stat. 2763A-258.

³¹⁰ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-14 (2012).

³¹¹ Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-16 (2012).

³¹² Colorado Ute Indian Water Rights Final Settlement Agreement, Dec. 10, 1986.

Ute Indian Water Rights Final Settlement Act of 1988.[■] The agreement gave the Ute Mountain Tribe rights to water from the Dolores Project, another Reclamation project on the Dolores River.[■] Additional water was to come from storage to be provided under the Animas-La Plata Project.[■] Determination that the project, as designed, would jeopardize the continued existence of two endangered species of fish in the San Juan River forced a downscaling of the project to one with storage essentially only for settlement of tribal water rights, and for some M&I water supply.[■] Congress ratified the redesign in a 2000 Amendment to the Settlement Act.[■]

Reclamation has now completed the construction of the project,[■] primarily featuring an off-stream reservoir called Lake Nighthorse with an expected average annual yield of 57,100 acre-feet of depletable water.[■] The two Colorado Ute tribes are each given the right to divert 33,050 acre-feet and deplete 16,525 acre-feet of water annually “for present and future needs.”[■] The Tribal Water Study reported total diversions rights for the Southern Ute Tribe as 128,939 acre-feet, and current diversions as 41,328 acre-feet.[■] The Tribal Water Study reported total diversion rights for the Ute Mountain Ute of 100,184 acre-feet and current diversions of 25,181 acre-feet.[■] Water rights claims for the Utah and New Mexico portions of the Ute Mountain Ute Tribe have not yet been settled.[■]

The Ute Indian Tribe of the Uintah and Ouray Reservation is located in northeast Utah, about 150 miles east and south of Salt Lake City, within an area known as the Uinta Basin.[■] Resolution of the tribe’s water rights claims has followed a complicated

[■] Colorado Ute Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-585, 102 Stat. 2973.

[■] Colorado Ute Indian Water Rights Final Settlement Agreement 6, Dec. 10, 1986.

[■] Colorado Ute Indian Water Rights Final Settlement Agreement 15, Dec. 10, 1986.

[■] U.S. Fish and Wildlife Service, Final Biological Opinion for the Animas-La Plata Project, Colorado and New Mexico, Oct. 26, 1991.

[■] Colorado Ute Indian Settlement Act Amendments of 2000, Pub. L. No. 106-554, 114 Stat. 2763A-258.

[■] <http://www.usbr.gov/uc/progact/animas/overview.html>.

[■] Brown and Caldwell, Animas La Plata Project Water Supply and Demand Study, 1-1, Prepared for the Colorado Water Conservation Board, Feb. 24, 2010.

[■] Brown and Caldwell, Animas La Plata Project Water Supply and Demand Study, 1-1, Prepared for the Colorado Water Conservation Board, Feb. 24, 2010. *See also* <http://www.usbr.gov/uc/progact/animas/faq.html>. The Navajo are given an allocation from Lake Nighthorse of 4,680 acre-feet per year, with the right to deplete half that amount. The tribes are not yet using this water.

[■] Colorado River Basin Ten Tribes Partnership Tribal Water Study, 5.2-10 & 5.2-20 (December 2018).

[■] Colorado River Basin Ten Tribes Partnership Tribal Water Study, 5.3-18 to 5.3-191 (December 2018).

[■] Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-16 & 18 (2012).

[■] Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C9, Tribal Water Demand Scenario Quantification, at C9-14 (2012).

path. In the 1930s, the Bureau of Indian Affairs completed the Uintah Indian Water Project, providing water for irrigation of lands within the reservation.¹⁰⁰ In 1960 the Tribe had a report prepared that analyzed its potential water claims under the *Winters* doctrine, using the practicably irrigable acreage standard.¹⁰¹ The State of Utah adopted this information in its 1980 report, “Tabulation of Ute Indian Water Rights.”¹⁰² The report identified more than 470,000 acre-feet of diversions, with total depletions of over 248,000 acre-feet, associated with the Tribe’s reserved rights claims.¹⁰³ The Ten Tribes study reported total water diversion rights, including unresolved claims, of 549,685 acre-feet and current diversions of 212,564 acre-feet.¹⁰⁴

Utah state leaders had been working for many years with the Bureau of Reclamation to develop plans for a Central Utah Project (CUP) that would develop additional water in the Uinta Basin for increased irrigation in that basin, and would also move water out of the Colorado River Basin (the Green River) into the Bonneville Basin with most of the state’s population.¹⁰⁵ To enable the CUP to develop water from sources in the Uinta Basin to which the Tribe held senior rights, the U.S. and the Central Utah Water Conservancy District entered into an agreement with the Tribe by which the Tribe agreed to defer development of a portion of its water rights for 40 years in return for use of water that would be stored in certain CUP facilities.¹⁰⁶ It looked like much of the Ute’s water rights claims might be satisfied through additional units to be added to the CUP. In 1990, the Tribe and the State negotiated a compact (Revised Ute Indian Compact of 1990) intended to fully quantify the Tribe’s reserved water rights.¹⁰⁷

For a variety of reasons, those units were never constructed. To help compensate for this change of plans, Congress, in 1992, authorized payments to the Ute Tribe of more than \$200 million.¹⁰⁸ Congress also ratified the 1990 Compact, subject to re-ratification

¹⁰⁰ Wikipedia, Uinta Indian Irrigation Project, https://en.wikipedia.org/wiki/Uinta_Indian_Irrigation_Project.

¹⁰¹ Water Rights Claims, Uintah and Ouray Indian Reservation, Utah (1960).

¹⁰² Tabulation of Ute Indian Water Rights, Ute Indian Tribe, Uintah and Ouray Reservation, Utah (1980).

¹⁰³ Tabulation of Ute Indian Water Rights, Ute Indian Tribe, Uintah and Ouray Reservation, Utah, Tables 2 & 3, at 6–7 (1980).

¹⁰⁴ Colorado River Basin Ten Tribes Partnership Tribal Water Study, 5.1-21 (December 2018).

¹⁰⁵ Craig Fuller, The Central Utah Project, Utah History to Go, online at http://historytogo.utah.gov/utah_chapters/utah_today/centralutahproject.html. See also Central Utah Water Conservancy District, The Central Utah Project (undated), available online at www.slcdocs.com/utilities/PDF%20Files/cup2a.pdf.

¹⁰⁶ Adam R. Eastman, The Central Utah Project—Uintah, Upalco, and Ute Indian Units, Historic Reclamation Projects Book, 15.

¹⁰⁷ Ute Indian Water Compact, Utah Code § 73-21-1 *et seq.*

¹⁰⁸ Pub. L. No. 102-575, § 502(a)(1) (Commencing one year from the date of enactment of this Act, and continuing for fifty years, the Tribe shall receive from the United States 26 percent of the annual Bonneville Unit municipal and industrial capital repayment obligation attributable to thirty-five thousand five hundred acre-feet of water, which represents a portion of the Tribe’s water rights that were to be supplied by storage from the Central Utah Project, but will not be supplied because the Upalco and Uintah units are not to be constructed.).

by the Tribe and the State.⁶⁰⁴ In addition, the legislation authorized off-reservation use of tribal water.⁶⁰⁵ The Compact has never been re-ratified. The most recent version of this compact, dated 2009, would ratify tribal rights as established in the 1980 report: 470,594 acre-feet of diversion rights and 248,943 acre-feet of depletion rights and would recognize the Tribe's right to use water for any purpose on reservation and to lease water for use off-reservation.⁶⁰⁶ But there are other provisions no longer acceptable to the Tribe.⁶⁰⁷ At present the process for resolving the water rights of the Ute Tribe appears stalemated.

The Navajo Reservation is the largest in the United States, with lands in both the Upper and Lower Basins, primarily in Arizona but also in New Mexico and Utah.⁶⁰⁸ In 1980, one source estimated Navajo reserved water rights, based on the irrigable acreage standard under the *Winters* doctrine, at two million acre-feet annually.⁶⁰⁹ The process of formally quantifying Navajo rights and identifying specific sources of water that the Nation can actually use has been slow. While about half of the reservation lands for the Navajo Nation are located in the Lower Basin, most of the established water rights now held by the Nation are located in the Upper Basin.

In 1962, Congress authorized construction of the Navajo Indian Irrigation Project (NIIP), envisioned as providing water to over 100,000 acres of land within the Navajo reservation in New Mexico.⁶¹⁰ The authorization included a right to divert 508,000 acre-feet of water each year from Navajo Reservoir on the San Juan River in New Mexico.⁶¹¹ Only about 75% of the project lands have been developed.⁶¹²

After 10 years of negotiations, the State and the Nation finalized the San Juan Navajo Water Rights Settlement in 2005.⁶¹³ The agreement put in place a framework to settle

⁶⁰⁴ Pub. L. No. 102-575, § 503(a).

⁶⁰⁵ Pub. L. No. 102-575, § 503(d).

⁶⁰⁶ Ute Indian Water Compact, Submitted for Tribal Referendum Vote—September 22, 2009, Art. IV(A), Art. VIII(A), available online at <https://www.waterrights.utah.gov/meetinfo/m20100211/compact.pdf>.

⁶⁰⁷ Daniel McCool, *Native Waters: Contemporary Indian Water Settlements and the Second Treaty Era* 173–74 (2002).

⁶⁰⁸ Bureau of Reclamation, *Colorado River Basin Water Supply and Demand Study*, Appendix C9, *Tribal Water Demand Scenario Quantification*, at C9-11 (2012).

⁶⁰⁹ William Douglas Back & Jeffery S. Taylor, *Navajo Water Rights: Pulling the Plug on the Colorado River?*, 20 Nat. Res. J. 71, 74 (1980).

⁶¹⁰ Pub. L. No. 87-483, 76 Stat. 96 (1962).

⁶¹¹ Section 2. With a maximum depletion of 250,000 acre-feet per year, project water uses were given a 1957 priority date, and must share shortages with other diversions of water from the San Juan.

⁶¹² 23rd Navajo National Council, Council moves forward with efforts to complete the Navajo Indian Irrigation Project, February 29, 2016, available online at https://www.google.com/search?site=&source=hp&q=Navajo+Indian+Irrigatin+Project&oq=Navajo+Indān+Irrigatin+Project&gs_l=hp.3..35i39k1j0i22i30k1l2.2509.8999.0.12304.32.32.0.0.0.0.227.3286.13j17j1.31.0....0...1.1.64.hp..1.30.3048.0..0j0i131k1j0i67k1j0i131i67k1j46i67k1j0i20k1j0i46i67k1.GMbyCf-hNsg.

⁶¹³ San Juan River Basin in New Mexico Navajo Nation Water Rights Settlement Agreement (2005).

all Navajo claims to water from the San Juan River.¹⁰⁰ It provided that water for a proposed Navajo-Gallup Water Supply Project would come out of water previously allocated to the NIIP but unused.¹⁰¹ It established a priority date for both projects the same as for the San Juan-Chama Project, and put in place a shortage-sharing agreement.¹⁰² Congress effectively ratified the agreement in 2009, fixing annual average depletions from the NIIP at 270,000 acre-feet,¹⁰³ and authorizing construction of the Navajo-Gallup Water Supply Project.¹⁰⁴ This project involves two pipelines carrying about 37,000 acre-feet of water from the San Juan River for domestic use on the Navajo Reservation and the Jicarilla Apache Reservation, and for the lease of water from the Jicarilla Apache Tribe to the Town of Gallup.¹⁰⁵ Because a planned spur would take water to Window Rock in Arizona, the Navajo Nation capitol, the legislation imposes several special requirements before this water can be delivered.¹⁰⁶ This legislation also authorized funding for rehabilitation of two other small (about 12,000 acres) Navajo irrigation projects.¹⁰⁷ In addition, it authorized water from the NIIP to be transferred for use outside NIIP project boundaries, within or outside Navajo Reservation boundaries,¹⁰⁸ and authorized the Navajo to enter into up to 99-year leases for use of water rights adjudicated to the Navajo with users anywhere in the State of New Mexico.¹⁰⁹ In total, the Navajo Nation now has the right to deplete about 337,000 acre-feet of water per year from sources in New Mexico.¹¹⁰ The Tribal Water Study reported current diversions of 285,562 acre-feet in New Mexico.¹¹¹

For a helpful summary of the process that supported the development of the Navajo-Gallup Water Supply Project and uses of Navajo rights to water from the San Juan River, see Utton Transboundary Resources Center, Navajo-Gallup Water Supply Project, Ch. 21, Water Matters!, available online at <http://uttoncenter.unm.edu/projects/water-matters.php>.

¹⁰⁰ Executive Summary of the San Juan River Basin in New Mexico Navajo Nation Water Rights Settlement 1 (April 19, 2005).

¹⁰¹ Executive Summary of the San Juan River Basin in New Mexico Navajo Nation Water Rights Settlement 3 (April 19, 2005).

¹⁰² Executive Summary of the San Juan River Basin in New Mexico Navajo Nation Water Rights Settlement 3 (April 19, 2005). Also included in this shortage sharing arrangement are rights for the Jicarilla Apache, and for other contractors for water from Navajo Reservoir.

¹⁰³ Omnibus Public Land Management Act, Pub. Law 111-11, Title X, § 10402(a) (2009).

¹⁰⁴ Omnibus Public Land Management Act, Pub. Law 111-11, Title X, § 10601 (2009).

¹⁰⁵ Bureau of Reclamation, Navajo-Gallup Water Supply Project, available online at <http://www.usbr.gov/uc/rm/navajo/nav-gallup/>.

¹⁰⁶ Omnibus Public Land Management Act, Pub. Law 111-11, Title X, § 10603 (2009).

¹⁰⁷ Omnibus Public Land Management Act, Pub. Law 111-11, Title X, § 10607(a) (2009).

¹⁰⁸ Omnibus Public Land Management Act, Pub. Law 111-11, Title X, § 10402 (2009).

¹⁰⁹ Omnibus Public Land Management Act, Pub. Law 111-11, Title X, § 10701 (2009).

¹¹⁰ Stanley M. Pollack, Navajo Nation Colorado River Issues, Presentation to Colorado River Water Users Association Annual Conference, Las Vegas, Nevada, Dec. 2013, available online at www.crwua.org/documents/conferences/2013-conference/Pollack_NN.pdf.

¹¹¹ Colorado River Basin Ten Tribes Partnership Tribal Water Study, 5.5-25 (Dec. 2018).

The State of Utah and the Navajo Nation have reached agreement on a settlement of water rights for use on the Navajo Reservation in Utah.[■] The Navajo Nation has approved the settlement.[■] The terms of the agreement give the Navajos rights to divert up to about 315,000 acre-feet per year, with annual depletion limited to 81,500 acre-feet.[■] Implementation of the settlement is contingent on Congressional approval, together with funding of about \$200 million to support construction of facilities necessary to use the water.[■] The Tribal Water Study reported uses in Utah of 30,368 acre-feet.[■]

Still unresolved are the claims of the Navajo and the Hopi to water from the Little Colorado River and from the main Colorado River for use in Arizona. The parties had negotiated a settlement in 2012 that attempted to reach resolution, but the agreement was rejected by the Navajo Nation.[■] The agreement centered on federal construction of groundwater development projects that would provide primarily domestic water supplies to people living on the Hopi and Navajo Reservations in Arizona.[■] In addition, there were provisions seeking to enable the Navajo to benefit from CAP water, either directly by diversion through the Navajo-Gallup Project facilities or by lease to other parties in Arizona.[■] The Tribal Water Study determined diversion rights of

■ Navajo Nation Council approves the Utah Navajo Water Rights Agreement, Jan. 27, 2016, available online at http://www.navajonationcouncil.org/pressReleases/2016/Jan/NNC_approves_the_Utah_Navajo_Water_Rights_Agreement.pdf.

■ Navajo Nation Council approves the Utah Navajo Water Rights Agreement, Jan. 27, 2016, available online at http://www.navajonationcouncil.org/pressReleases/2016/Jan/NNC_approves_the_Utah_Navajo_Water_Rights_Agreement.pdf. The Utah Legislature gave its approval in 2015. Concurrent Resolution Regarding Navajo Water Rights Settlement, 2015 General Session State of Utah, available online at <http://le.utah.gov/~2015/bills/static/SCR002.html>.

■ Navajo Nation Council approves the Utah Navajo Water Rights Agreement, Jan. 27, 2016, available online at http://www.navajonationcouncil.org/pressReleases/2016/Jan/NNC_approves_the_Utah_Navajo_Water_Rights_Agreement.pdf.

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■ Colorado River Basin Ten Tribes Partnership Tribal Water Study, 5.5-25 (December 2018).

■ Anne Minard, Navajo Hopi Water Rights Debate Continues as Navajo Council Denies Agreement; Hopi Approves. Read more at <http://indiancountrytodaymedianetwork.com/2012/07/08/navajo-hopi-water-rights-debate-continues-navajo-council-denies-agreement-hopi-approves;Navajo-Hopi-Little-Colorado-River-Water-Rights-Settlement-Agreement>, Final Draft-March 8, 2012, available online at <http://www.hopi-nsn.gov/wp-content/uploads/2013/05/NHLCRS-Settlement-Agreement-03-08-12.pdf>.

■ Navajo-Hopi Little Colorado River Water Rights Settlement Agreement, Final Draft-March 8, 2012, at 10.1 and 10.2, available online at <http://www.hopi-nsn.gov/wp-content/uploads/2013/05/NHLCRS-Settlement-Agreement-03-08-12.pdf>.

■ Navajo-Hopi Little Colorado River Water Rights Settlement Agreement, Final Draft-March 8, 2012, at 9.0, available online at <http://www.hopi-nsn.gov/wp-content/uploads/2013/05/NHLCRS-Settlement-Agreement-03-08-12.pdf>.

77,049 acre-feet and current uses of 45,385 acre-feet on the Navajo Reservation in Arizona.³⁰⁴

The water rights of the tribes in the Upper Basin are summarized in Table 12.

TABLE 12
TRIBAL WATER RIGHTS IN THE UPPER BASIN

Reservation	State	Source of water	Diversion /depletion (afy)
Jicarilla Apache	NM	San Juan	45,683/34,195
Navajo	NM	San Juan	606,660/325,670
Southern Ute	CO	Animas	137,090/74,318
Ute Indian Tribe	UT	Green/Uinta	480,594/258,943
Ute Mountain	CO	Animas/Dolores	88,358/51,081

Source: Bureau of Reclamation, Colorado River Basin Water Supply and Demand Study, Appendix C-9.

F. Summary.

Substantial progress has been made in clarifying the rights of Indian nations to the use of water in the Colorado River Basin. Determinations have now been made of the extent of tribal water rights for the majority of reservations in the basin. But, as the Ten Tribes Study revealed, tribes with reservations in the Upper Basin have unresolved claims of about 762,000 acre-feet.³⁰⁵ In addition to quantifying these rights, these determinations have generally clarified the uses to which these rights may be placed and, most importantly, have identified the sources of water that will give these rights the ability to be used. In many cases, these determinations have also provided for the construction or the enhancement of the infrastructure needed for such uses to be possible. We are entering a new era in which the promise of the *Winters* Doctrine that sufficient water would be available to tribes to help make reservations the permanent homelands they were promised to be is becoming a reality.³⁰⁶

It has not been easy, and it is far from over. The process has been halting and ridden with conflict. The use of state general adjudication procedures to resolve tribal claims has been challenging for tribes, with highly mixed results.³⁰⁷ The turn to using negotiated settlement agreements, ratified by Congress, was a positive step, one that has led not only to quantifications of tribal rights but clear determination of the manner in

³⁰⁴ Colorado River Basin Ten Tribes Partnership Tribal Water Study, 5.5-25 (December 2018).

³⁰⁵ Colorado River Basin Ten Tribes Partnership Tribal Water Study, 5.11-1 (December 2018). Unresolved claims are much less in the Lower Basin—about 23,000 among tribes in the Ten Tribes Partnership.

³⁰⁶ For reflections on the *Winters* doctrine at 100, see *The Future of Indian and Federal Reserved Water Rights: The Winters Centennial* (Barbara Cosens & Judith V. Royster, eds.) (2012).

³⁰⁷ Lawrence J. MacDonnell, *General Stream Adjudications, the McCarran Amendment, and Reserved Water Rights*, 15 Wyo. L. Rev. 313 (2015).

which tribes may in fact be able to use their rights. Each settlement is the product of prolonged negotiations among all the key parties, including the state and non-Indian water users.⁶⁰⁰ Tribes have generally been willing to accept less water than might have been quantified under the traditional practicably irrigable acreage standard, and even accept more recent priorities, in return for agreement about how they will be able to put water to actual use.⁶⁰¹ Settlements identify the specific sources of water, and make clear how this water will be available to tribes, including provision for funding needed to bring water to the reservation and place it to use.⁶⁰² They often include funding to help with other economic development measures.⁶⁰³ They may provide for the tribes to develop their own water codes, and put in place their own on-reservation water management systems.⁶⁰⁴ They may make clear tribal rights to use ground water

⁶⁰⁰ A helpful overview of settlements is provided in Bonnie C. Colby, et al., *Negotiating Tribal Water Rights: Fulfilling Promises in the Arid West* (2005).

⁶⁰¹ For example, the Gila River Indian Community quantified its claims to water as 1.5 million acre-feet with a time immemorial priority date. The settlement provided the means to make use of 653,500 acre-feet annually, on average, drawing from a mix of sources with different priority dates. *See* John B. Weldon, Jr. & Lisa M. McKnight, *Future Indian Water Settlements in Arizona: The Race to the Bottom of the Waterhole?*, 49 *Ariz. L. Rev.* 441, 460 (2007).

⁶⁰² For example, to get water from the San Juan River to users on the Navajo Reservation, Congress authorized and funded construction of the Navajo-Gallup Water Supply Project. Section 10602, Pub. L. No. 111-11, 123 Stat. 1367 (2009).

⁶⁰³ *See, e.g.*, Zuni Indian Tribe Water Rights Settlement Act of 2003, Pub. L. No. 108-34, 117 Stat. 782, § 6.

⁶⁰⁴ *See, e.g.*, Gila River Indian Community Water Rights Settlement Act of 2004, Arizona Water Settlements Act, Public Law 108-451, 118 Stat. 3478, Tit. II, § 204(e)(2):

Not later than 18 months after the enforceability date, the Community shall enact a water code, subject to any applicable provision of law (including subsection (a)(3)), that—(i) manages, regulates, and controls the water resources on the Reservation; (ii) governs all of the water rights that are held in trust by the United States; and (iii) provides that, subject to approval of the Secretary—(I) the Community shall manage, regulate, and control the water resources described in the Gila River agreement and allocate water to all water users on the Reservation pursuant to the water code; (II) the Community shall establish conditions, limitations, and permit requirements relating to the storage, recovery, and use of the water resources described in the Gila River agreement; (III) any allocation of water shall be from the pooled water resources described in the Gila River agreement; (IV) charges for delivery of water for irrigation purposes to water users on the Reservation (including water users on allotted land) shall be in regard to the status of the Reservation land on which the water is used; (V) there is a process by which any user of or applicant to use water for irrigation purposes (including water users on allotted land) may request that the Community provide water for irrigation use in accordance with this title; (VI) there is a due process system for the consideration and determination by the Community of any request by any water user on the Reservation (including water users on allotted land), for an allocation of water, including a process for appeal and adjudication of denied or disputed distributions of water and for resolution of contested administrative decisions; and (VII) there is a requirement that any allottee with a claim relating to the enforcement of rights of the allottee under the water code or relating to the amount of water allocated to land of the allottee must first exhaust remedies available to the allottee under Community law and the water code before initiating an action against the United States or petitioning the Secretary pursuant to subsection (a)(3)(F).

(B) APPROVAL.—Any provision of the water code and any amendments to the water code that

underlying their reservations.[■] And they may authorize tribes to lease or exchange water for off-reservation uses. Leasing provisions are summarized in Appendix 1.

There is some inconsistency respecting the purposes for which tribal reserved rights may be used. The U.S. Supreme Court in *Arizona v. California* made it clear that while it assumed irrigation use for purposes of quantifying the reserved rights of the five main Colorado reservations, the tribes were free to make any beneficial use of the water on-reservation.[■] Yet the Wyoming Supreme Court decided that the reserved rights for the Wind River Reservation in Wyoming can only be used for agricultural purposes.[■] However, the settlements to date in the Colorado River Basin authorize a wide range of specified uses. For example, the 1984 Ak-Chin Settlement Act authorizes the Ak-Chin Indian Community “to have the right to devote the permanent water supply provided for by this Act to any use, including but not limited to agricultural, municipal, industrial, commercial, mining or recreational use.”[■] The 2003 Zuni Settlement provides “water use by the Zuni Tribe or the United States on behalf of the Zuni Tribe for wildlife or instream flow use, or for irrigation to establish or maintain wetland on the Reservation, shall be considered to be consistent with the purposes of the Reservation.”[■] The Southern Arizona Water Rights Settlement Act of 2004 authorizes the Tohono O’odham Nation “to [make] any use (including any agricultural, municipal, domestic, industrial, commercial, mining, underground storage, instream flow, riparian habitat maintenance, or recreational use).”[■]

The major challenge has been to find reliable sources of water that can be used by tribes without undue disruption to other existing uses. We have described the unexpected transformation of the Central Arizona Project from a means of making renewable surface water available to irrigators in central Arizona to a project primarily serving urban and tribal water needs. We also mentioned the transformation of the Animas-La Plata Project in Colorado from supplemental water for agriculture to primarily water for urban and tribal uses. These were somewhat unique opportunities at the end of the traditional Reclamation era to redesign projects not yet allocated to other uses. Finding sources of water to satisfy the remaining tribal claims will be challenging in our over-appropriated world.

affect the rights of the allottees shall be subject to the approval of the Secretary, and no such provision or amendment shall be valid until approved by the Secretary.

■ See, e.g., Southern Arizona Water Rights Settlement Amendments Act of 2004, Title III, Arizona Water Rights Settlements Act, Pub. L. No. 108-451, 118 Stat. 3536 (2004), § 309(f).

■ See *supra* § IV.C.

■ *In re* General Adjudication of All Rights to Use Water in the Big Horn River System, 753 P.2d 76, 84 (Wyo. 1988).

■ Ak-Chin Settlement Act of 1984, Pub. L. No. 98-530, 98 Stat. 2698, § 2(j).

■ Zuni Indian Tribe Water Rights Settlement Act of 2003, Pub. L. No. 108-34, 117 Stat. 782, § 8(b)(1)(E).

■ Arizona Water Rights Settlement of 2004, Pub. L. No. 108-451, 118 Stat. 3478, § 309(a).

V. Concluding Thoughts.

The Law of the Colorado River has grown and evolved over the years into a complex but integrated body of rules and agreements, piece by piece addressing needs as they arose, and operating as a flexible framework in which various interests have been able to be represented. Concerned initially with dividing consumptive uses of the basin's water, it has broadened substantially—both in the kinds of issues addressed and in the interests that participate. Over time, the framework has grown enormously complex, requiring extended study to master its many pieces. Several leading academics have called for establishing a more formal decision-making organization, and for making wholesale changes to the 1922 Compact.[■] While the case for change can be made, the basin states are firmly opposed, and argue that the framework, including the 1922 Compact, is flexible and adaptable, as evidenced by the many new pieces that have been added to the Law of the River over the year; especially in the past two decades.[■]

The Law of the River's adaptability will be tested as the basin states, the U.S., Mexico, and other interested parties begin the process of revising the Interim Shortage Guidelines, a process set to begin in 2020 and to conclude no later than the end of 2025.[■] While in theory only a process to address the ongoing operational criteria for the operations of Lake Mead and Lake Powell, and to revisit the agreed-upon allocations of shortages and surpluses, in practice this process is likely to force a broad-ranging discussion about ways to rationalize the basin's water budget,[■] how to integrate tribal water rights and uses into the system, and how to make needed improvements to the basin's water-related ecosystems, especially in the Delta. Reclamation's 2012 basin study made clear that water uses now exceed water supply. Global warming already has affected flows, a process likely to continue, that will further constrain water supplies. Tribes are expressing an increased determination to enjoy the benefits of their substantial senior water rights, including those presently unused. The already fragile state of the river's environment will be further stressed by global warming and reduced flows. Meanwhile, urban growth in the areas served with water from the Colorado River is certain to continue.

■ See, e.g., Robert W. Adler, *Revisiting the Colorado River Compact: Time for a Change*, 28 J. Land Resources & Envtl. L. 19, 48 (2008); David H. Getches, *Colorado River Governance: Sharing Federal Authority as an Incentive to Create a New Institution*, 68 U. Colo. L. Rev. 573 (1997); Douglas S. Kenney, et al., *The Colorado River and the Inevitability of Institutional Change*, 32 Public Land & Resources Law Review 103 (2011).

■ See Colorado River Research Group, *Reflections on Two Tumultuous Decades in the Colorado River Basin* (2020).

■ Record of Decision, *Colorado River Interim Guidelines for Lower Basin Shortages and the Coordinated Operations for Lake Powell and Lake Mead*, December 2007, § 8(a), p. 57.

■ A careful look at the Lower Basin's water budget is provided in Jason A. Robison and Lawrence J. MacDonnell, *Arizona v. California & the Colorado River Compact: Fifty Years Ago, Fifty Years Ahead*, 4 Ariz. J. Envtl. L. & Pol'y 130, 144–58 (2013-2014).

Some interesting new ideas are emerging that would involve significant changes in critical pieces of the Law of the River.[■] The specifics vary, but the pieces involve some kind of management of future Upper Basin uses and some certainty respecting future water deliveries to the Lower Basin, in return for relaxation of the 10-year, 75 million acre-foot flow obligation to the Lower Basin, permanently reducing or eliminating the structural deficit in the Lower Basin, and a plan for meeting water obligations to Mexico. It's not clear the states are ready to seriously negotiate some kind of "grand bargain," preferring instead to continue to implement incremental actions sufficient to minimize changes. The good news is that, beginning in the 1990s, the states have demonstrated a willingness to negotiate in good faith to find acceptable solutions, a spirit of cooperation that has been substantially facilitated by the efforts of the Department of the Interior and the Bureau of Reclamation. Every bit of this cooperative spirit will be needed to navigate the pathway ahead.

■ See, e.g., Bruce Finley, *West wrestles with Colorado River "grand bargain" as changing climate depletes water governed by 1922 compact*, Denver Post, Aug. 25, 2019; Eric Kuhn and John Fleck, *Is there a "Grand Bargain" to be had in the Colorado River Basin?*, Inkstain, June 2, 2019, available online at <http://www.inkstain.net/fleck/2019/06/is-there-a-grand-bargain-to-be-had-in-the-colorado-river-basin>; Lawrence J. MacDonnell, *The Disappearing Colorado River*, Western Economics Forum 1 (Fall 2010).

APPENDIX 1.

Leasing Provisions in Tribal Water Settlements.

Upper Basin	Authority	Leasing Provisions
Jicarilla Apache (New Mexico)	Act of October 23, 1992, Pub. L. No. 102-441, 106 Stat. 2237	Section 7. (a) When water made available under the Settlement Contract approved by section 6 of this Act is not being used by the Tribe, the Tribe may subcontract with third parties, subject to the approval of the Secretary in accordance with this section, to supply water for beneficial use outside of the reservation, subject to and not inconsistent with the same requirements and conditions of State law, any applicable Federal law, interstate compact, and international law as apply to the exercise of water rights held by non-Federal, non-Indian entities.
Navajo (New Mexico)	Pub. L. No. 87-483, 76 Stat. 96, § 10402, § 10701 (Water Rights)	(d) The Navajo Indian Irrigation Project water diverted under subsection (b) may be transferred to areas located within or outside the area served by Navajo Indian Irrigation Project facilities, and within or outside the boundaries of the Navajo Nation, for any beneficial use in accordance with—(1) the agreement executed under section 10701(a)(2) of the Northwestern New Mexico Rural Water Projects Act; (2) the contract executed under section 10604(a)(2)(B) of that Act; and (3) any other applicable law. (c) SUBCONTRACTS.—(1) IN GENERAL.—(A) SUBCONTRACTS BETWEEN NATION AND THIRD PARTIES.—The Nation may enter into subcontracts for the delivery of Project water under the Contract to third parties for any beneficial use in the State of New Mexico (on or off land held by the United States in trust for the Nation or a member of the Nation or land held in fee by the Nation). (d) WATER LEASES NOT REQUIRING SUBCONTRACTS.—(1) AUTHORITY OF NATION.—(A) IN GENERAL.—The Nation may lease, contract, or otherwise transfer to another party or to another purpose or place of use in the State of New Mexico (on or off land that is held by the United States in trust for the Nation or a member of the Nation or held in fee by the Nation) a water right that—(i) is decreed to the Nation under the Agreement; and (ii) is not subject to the Contract.

Upper Basin	Authority	Leasing Provisions
Southern Ute Indian Tribe (Colorado)	Colorado Utes Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-585, 102 Stat. 2973	SEC. 5. DISPOSAL OF WATER. (a) INDIAN INTERCOURSE ACT.—The provisions of section 2116 of the Revised Statutes (25 U.S.C. 177) shall not apply to any water rights confirmed in the Agreement and the final consent decree: (b) RESTRICTION ON DISPOSAL OF WATERS INTO LOWER COLORADO RIVER BASIN.—None of the waters from the Animas-La Plata or Dolores Projects may be sold, exchanged, leased, used, or otherwise disposed of into or in the Lower Colorado River Basin unless water within the Colorado River Basin held by non-Federal, non-Indian holders of that water pursuant to any water rights could be so sold, exchanged, leased, used, or otherwise disposed of under State law, Federal law, interstate compacts, or international treaty pursuant to a final, nonappealable order of a Federal court or pursuant to an agreement of the seven States signatory to the Colorado River Compact. (c) USE OF WATER RIGHTS.—(1) The use of the rights referred to in Contracts, subsection (a) within the State of Colorado shall be governed solely as provided in the Agreement as modified pursuant to section 11 of this Act and this subsection. The Agreement is hereby modified to provide that a Tribe may voluntarily elect to sell, exchange, lease, use, or otherwise dispose of any portion of a water right confirmed in the Agreement and final consent decree off its reservation. If either the Southern Ute Indian Tribe or the Ute Mountain Ute Indian Tribe so elects, and as a condition precedent to such sale, exchange, lease, use, or other disposition, that portion of the Tribe's water right shall be changed to a Colorado State water right, but be such a State water right only during the use of that right off the reservation, and shall be fully subject to State laws, Federal laws, interstate compacts, and international treaties applicable to the Colorado River and its tributaries, including the appropriation, use, development, storage, regulation, allocation, conservation, exportation, or quality of those waters.
Ute Indian Tribe of the Uintah and Ouray Reservation	Title V, "Ute Indian Rights Settlement," of Reclamation Projects	SEC. 503. TRIBAL USE OF WATER (b) THE INDIAN INTERCOURSE ACT.—The provisions of section 2116 of the Revised Statutes (25 U.S.C. 177) shall not apply to any water rights confirmed in the Compact.

Upper Basin	Authority	Leasing Provisions
	Authorization and Adjustment Act of 1992, Pub. L. No. 102-575, 106 Stat. 4601—To authorize additional appropriations for the construction of the Buffalo Bill Dam and Reservoir, Shoshone Project, Pick-Sloan Missouri Basin Program, Wyoming	(c) RESTRICTION ON DISPOSAL OF WATERS INTO THE LOWER COLORADO RIVER BASIN.—None of the waters secured to the Tribe in the Revised Ute Indian Compact of 1990 may be sold, exchanged, leased, used, or otherwise disposed of into or in the Lower Colorado River Basin, below Lees Ferry, unless water rights within the Upper Colorado River Basin in the State of Utah held by non-Federal, non-Indian users could be so sold, exchanged, leased, used, or otherwise disposed of under Utah State law, Federal law, interstate compacts, or international treaty pursuant to a final, nonappealable order of a Federal court or pursuant to an agreement of the seven States signatory to the Colorado River Compact; Provided, however, That in no event shall such transfer of Indian water rights take place without the filing and approval of the appropriate applications with the Utah State Engineer pursuant to Utah State law. (d) USE OF WATER RIGHTS. . . . The Tribe may voluntarily elect to sell, exchange, lease, use, or otherwise dispose of any portion of a water right confirmed in the Revised Compact off the Uintah and Ouray Indian Reservation. If the Tribe so elects, and as a condition precedent to such sale, exchange, lease, use, or other disposition, that portion of the Tribe's water right shall be changed to a State water right, but shall be such a State water right only during the use of that right off the reservation, and shall be fully subject to State laws, Federal laws, interstate compacts, and international treaties applicable to the Colorado River and its tributaries, including the appropriation, use, development, storage, regulation, allocation, conservation, exportation, or quality of those waters.
Ute Mountain Ute Tribe (Colorado)	Colorado Utes Indian Water Rights Settlement Act of 1988, Pub. L. No. 100-585, 102 Stat. 2973	Same provisions as for Southern Utes

Gila Basin, Arizona	Authority	Leasing Provisions
Ak-Chin Indian Community	Pub. L. No. 95-328, 92 Stat. 409 (1978), amended, Pub. L. No. 98-530, 98 Stat. 2698 (1984), amended, Pub. L. No. 102-497, 106 Stat. 3258 (1992), amended, Pub. L. No. 106-285, 114 Stat. 878 (2000)	Ak-Chin Water Use Amendments Act of 2000. SEC. 2. TECHNICAL AMENDMENTS TO AK-CHIN WATER USE ACT OF 1984. . . . (b) AUTHORIZATION OF USE OF WATER.—Section 2(j) of the Act of October 19, 1984 (Public Law 98-530; 98 Stat. 2698), as amended by section 10 of the Act of October 24, 1992 (Public Law 102-497; 106 Stat. 3258), is amended to read as follows: “(j)(1) The Ak-Chin Indian Community (hereafter in this Act referred to as the ‘Community’) shall have the right to devote the permanent water supply provided for by this Act to any use, including agricultural, municipal, industrial, commercial, mining, recreational, or other beneficial use, in the areas initially designated as the Pinal, Phoenix, and Tucson Active Management Areas pursuant to the Arizona Groundwater Management Act of 1980, laws 1980, fourth special session, chapter 1. The Community is authorized to lease or enter into options to lease, to renew options to lease, to extend the initial terms of leases for the same or a lesser term as the initial term of the lease, to renew leases for the same or a lesser term as the initial term of the lease, to exchange or temporarily dispose of water to which it is entitled for the beneficial use in the areas initially designated as the Pinal, Phoenix, and Tucson Active Management Areas pursuant to the Arizona Groundwater Management Act of 1980, laws 1980, fourth special session, chapter 1. “(2) Notwithstanding paragraph (1), the initial term of any lease entered into under this subsection shall not exceed 100 years and the Community may not permanently alienate any water right. In the event the Community leases, enters into an option to lease, renews an option to lease, extends a lease, renews a lease, or exchanges or temporarily disposes of water, such action shall only be valid pursuant to a contract that has been accepted and ratified by a resolution of the Ak-Chin Indian Community Council and approved and executed by the Secretary.”
Fort McDowell Indian Community	Fort McDowell Indian Community Water Rights Settlement Act of 1990, Pub. L. No.	SEC. 407. WATER DELIVERY CONTRACT AMENDMENTS; WATER LEASES. (a) The Secretary is authorized and directed to amend the CAP water delivery contract between the United States and the community dated December 11, 1980 (herein referred to as the “Community Delivery Contract”), as follows: (1) to extend the term of such contract to December 31, 2099,

Gila Basin, Arizona	Authority	Leasing Provisions
	101-628, 104 Stat. 4480 (1990)	and to provide for its subsequent renewal upon terms and conditions to be agreed upon by the parties prior to the expiration of the extended term thereof; (2) to authorize the Community to lease the CAP water to which the Community is entitle under the Community CAP Delivery Contract to the City of Phoenix under the terms and conditions of the Project Water lease set forth in exhibit "20.2.2" to the Agreement for a term commencing January 1, 2001 and ending December 31, 2099.
Gila River Indian Community	Arizona Water Settlements Act of 2004, Pub. L. No. 108-451, 118 Stat. 3478 (2004) TITLE II— Gila River Indian Community Water Rights Settlement	SEC. 204. WATER RIGHTS. . . . (b) REALLOCATION.—. . . (2) SOLE AUTHORITY.—In accordance with this section, the Community shall have the sole authority, subject to the Secretary's approval pursuant to section 205(a)(2), to lease, distribute, exchange, or allocate the CAP water described in this subsection, except that this paragraph shall not impair the right of an allottee to lease land of the allottee together with the water rights appurtenant to the land. Nothing in this paragraph shall affect the validity of any lease or exchange ratified in section 205(c) or 205(d). SEC. 205. COMMUNITY WATER DELIVERY CONTRACT AMENDMENTS. (a) . . . (2) the Community may, with the approval of the Secretary, including approval as to the Secretary's authority under section 7 of the Act of February 8, 1887 (25 U.S.C. 381)—(A) enter into contracts or options to lease (for a term not to exceed 100 years) or contracts or options to exchange, Community CAP water within Maricopa, Pinal, Pima, La Paz, Yavapai, Gila, Graham, Greenlee, Santa Cruz, or Coconino Counties, Arizona, providing for the temporary delivery to others of any portion of the Community CAP water; and (B) renegotiate any lease at any time during the term of the lease, so long as the term of the renegotiated lease does not exceed 100 years; (3)(A) the Community, and not the United States, shall be entitled to all consideration due to the Community under any leases or options to lease and exchanges or options to exchange Community CAP water entered into by the Community; . . . (f) PROHIBITIONS.—(1) USE OUTSIDE THE STATE.—None of the Community CAP water shall be leased, exchanged, forborne, or otherwise transferred in any way by the Community for use directly or indirectly outside the State.

Gila Basin, Arizona	Authority	Leasing Provisions
		(2) USE OFF RESERVATION.—Except as authorized by this section and subparagraph 4.7 of the Gila River agreement, no water made available to the Community under the Gila River agreement, the Globe Equity Decree, the Haggard Decree, or this title may be sold, leased, transferred, or used off the Reservation other than by exchange. (3) AGREEMENTS WITH THE ARIZONA WATER BANKING AUTHORITY.—Nothing in this Act or the Gila River agreement limits the right of the Community to enter into any agreement with the Arizona Water Banking Authority, or any successor agency or entity, in accordance with State law.
Salt River Pima-Maricopa Indian Commu- nity	Salt River Pima- Maricopa In- dian Commu- nity Water Rights Settle- ment Act of 1988, Pub. L. No. 100-512, 102 Stat. 2549 (1988)	SEC. 8. WATER DELIVERY CONTRACT AMENDMENTS; WATER LEASE. (a) The Secretary is authorized and directed to amend the CAP water delivery contract between the United States and the Community dated December 11, 1980 (herein referred to as the “Community CAP Delivery Contract”), as follows: (1) to extend the term of such contract to December 31, 2098, and to provide for its subsequent renewal upon terms and conditions to be agreed upon by the parties prior to the expiration of the extended term thereof; (2) to authorize the Community to lease the CAP water to which the Community is entitled under the Community CAP Delivery Contract to the Arizona cities of Chandler, Glendale, Mesa, Phoenix, Scottsdale, and Tempe and the Arizona town of Gilbert under the terms and conditions of the Project Water Lease set forth in exhibits “3.m.1” through “3.m.7” to the Agreement for a term commencing January 1, 2000, and ending December 30, 2098; . . . (d) The Community and the Secretary shall lease to the cities and the town, for a term commencing on January 1, 2000, and ending December 30, 2098, and for the total consideration of \$16,000,000 to be paid by the cities and the town to the Community, . . . , up to [13,300] acre-feet of CAP water to which the Community is entitled under the Community CAP Delivery Contract. The Project Water Leases shall specifically provide that—(1) the cities and the town, each in accordance with its obligations under the Project Water Leases, shall pay all operation, maintenance and replacement costs of such water to the United States, or, if directed by the Secretary, to the Central Arizona Water Conservation District: Provided, That such payments shall not be commenced earlier than October 1, 1998; (2) except as otherwise provided in the Project

Gila Basin, Arizona	Authority	Leasing Provisions
		Water Leases, the cities and the town shall not be obligated to pay water service capital charges or municipal and industrial subcontract charges or any other charges or payment for such CAP water other than the operation, maintenance, and replacement costs and lease payments as set forth in this subsection.
San Carlos Apache Tribe	San Carlos Apache Tribe Water Rights Settlement Act of 1992, Pub. L. No. 102-575, 106 Stat. 4740 (1992)	Section 3706 (b) . . . (3) To authorize the Tribe to lease or to enter into an option or options to lease the water to which the Tribe is entitled under the Tribal CAP Delivery Contract, as amended, within Maricopa, Final and Pima Counties for terms not exceeding [100] years and to renew such leases. (4) To authorize the Tribe to lease water to which the Tribe is entitled under the Tribal CAP Delivery Contract, as amended, to the city of Scottsdale . . . (5) To authorize the Tribe to lease water to which the Tribe is entitled under the Tribal CAP Delivery Contract, as amended, including, but not limited to, the cities of Chandler, Glendale, Goodyear, Mesa, Peoria, Phoenix, Scottsdale, Tempe and the town of Gilbert.
Tohono O'odham Na- tion	AZ Water Rights Settle- ment of 2004, Pub. L. No. 108-451, 118 Stat. 3478 TITLE III— Southern Ari- zona Water Rights Settle- ment Amend- ments Act of 2004	Section 309. Uses of Water . . . “(2) USE OUTSIDE THE NATION’S RESERVATION.—“(A) IN GENERAL.—Water resources granted or confirmed under this title may be sold, leased, transferred, or used by the Nation outside of the Nation’s Reservation only in accordance with this title. “(B) USE WITHIN CERTAIN AREA.—Subject to subsection (c), the Nation may use the Central Arizona Project water supplies acquired under sections 304(a) and 306(a) within the Central Arizona Project service area. “(C) STATE LAW.—With the exception of Central Arizona Project water and groundwater withdrawals under the Asarco agreement, the Nation may sell, lease, transfer, or use any water supplies and storage credits acquired as a result of a project authorized under section 308(e) at any location outside of the Nation’s Reservation, but within the State, only in accordance with State law. “(D) LIMITATION.—Deferred pumping storage credits provided for in section 308(f) shall not be sold, leased, transferred, or used outside the Nation’s Reservation. Water acquired under section 304(a) or 306(a) shall be leased, exchanged, forborne, or otherwise transferred by the Nation for any direct or indirect use outside the State. “(c) EXCHANGES AND LEASES; CONDITIONS ON EXCHANGES AND LEASES.—“(1) IN GENERAL.—With respect to users outside the Nation’s

Gila Basin, Arizona	Authority	Leasing Provisions
		Reservation, the Nation may, for a term of not to exceed 100 years, assign, exchange, lease, provide an option to lease, or otherwise temporarily dispose of to the users, Central Arizona Project water to which the Nation is entitled under sections 304(a) and 306(a) or storage credits acquired under section 308(e), if the assignment, exchange, lease, option, or temporary disposal is carried out in accordance with—“(A) this subsection; and “(B) subsection (b)(2). “(2) LIMITATION ON ALIENATION.—The Nation shall not permanently alienate any water right under paragraph (1). “(3) AUTHORIZED USES.—The water described in paragraph (1) shall be delivered within the Central Arizona Project service area for any use authorized under applicable law. “(4) CONTRACT.—An assignment, exchange, lease, option, or temporary disposal described in paragraph (1) shall be executed only in accordance with a contract that—“(A) is accepted by the Nation; “(B) is ratified under a resolution of the Legislative Council of the Nation; “(C) is approved by the United States as Trustee; and “(D) with respect to any contract to which the United States or the Secretary is a party, provides that an action may be maintained by the contracting party against the United States and the Secretary for a breach of the contract by the United States or Secretary, as appropriate. “(5) TERMS EXCEEDING 25 YEARS.—The terms and conditions established in paragraph 11 of the Tohono O’odham settlement agreement shall apply to any contract under paragraph (4) that has a term of greater than 25 years. “(d) LIMITATIONS ON USE, EXCHANGES, AND LEASES.—The rights of the Nation to use water supplies under subsection (a), and to assign, exchange, lease, provide options to lease, or temporarily dispose of the water supplies under subsection (c), shall be exercised on conditions that ensure the availability of water supplies to satisfy the first right of beneficial use under section 307(a)(1)(G)(i). . . . “(f) WATER RIGHTS UNAFFECTED BY USE OR NONUSE.—The failure of the Nation to make use of water provided under this title, or the use of, or failure to make use of, that water by any other person that enters into a contract with the Nation under subsection (c) for the assignment, exchange, lease, option for lease, or temporary disposal of water, shall not diminish, reduce, or impair—“(1) any water right of the Nation, as established under this title or any other applicable law; or

Gila Basin, Arizona	Authority	Leasing Provisions
		“(2) any water use right recognized under this title, including—“(A) the first right of beneficial use referred to in section 307(a)(1)(G)(i); or “(B) the allottee use rights referred to in section 308(a). “(g) AMENDMENT TO AGREEMENT OF DECEMBER 11, 1980.—The Secretary shall amend the agreement of December 11, 1980, to provide that—“(1) the contract shall be—“(A) for permanent service (within the meaning of section 5 of the Boulder Canyon Project Act of 1928 (43 U.S.C. 617d)); and “(B) without limit as to term; “(2) the Nation may, with the approval of the Secretary—“(A) in accordance with subsection (c), assign, exchange, lease, enter into an option to lease, or otherwise temporarily dispose of water to which the Nation is entitled under sections 304(a) and 306(a); and “(B) renegotiate any lease at any time during the term of the lease if the term of the renegotiated lease does not exceed 100 years; “(3)(A) the Nation shall be entitled to all consideration due to the Nation under any leases and any options to lease Arizona Project water entered into by the Nation; and “(B) the United States shall have no trust obligation or other obligation to monitor, administer, or account for any consideration received by the Nation under those leases or options to lease and exchanges or options to exchange; “(4)(A) all of the Nation’s Central Arizona Project water shall be delivered through the Central Arizona Project aqueduct; and Arizona Project subcontractors, if the Central Arizona Project contractors or Central Arizona Project subcontractors are allowed to take delivery of water other than through the Central Arizona Project aqueduct; “(5) the Nation may use the Nation’s Central Arizona Project water on or off of the Nation’s Reservation for the purposes of the Nation consistent with this title;
White Mountain Apache Tribe	White Mountain Apache Tribe Water Rights Quantification Act of 2010, Pub. L. 111-291,	TITLE III—WHITE MOUNTAIN APACHE TRIBE WATER RIGHTS QUANTIFICATION Section 305. . . . (b) . . . (2) AUTHORITY OF TRIBE.—Subject to approval by the Secretary under section 306(a)(1), the Tribe shall have the sole authority to lease, distribute, exchange, or allocate the tribal CAP water described in paragraph (1). . . .

Gila Basin, Arizona	Authority	Leasing Provisions
	124 Stat. 3064 (2010)	SEC. 306. CONTRACT. (a) IN GENERAL.—The Secretary shall enter into the Contract, in accordance with the Agreement, to provide, among other things, that—(1) the Tribe, on approval of the Secretary, may—(A) enter into contracts or options to lease, contracts to exchange, or options to exchange tribal CAP water in Maricopa, Pinal, Pima, and Yavapai Counties in the State providing for the temporary delivery to any individual or entity of any portion of the tribal CAP water, subject to the condition that—(i) the term of the contract or option to lease shall not be longer than 100 years; (ii) the contracts or options to exchange shall before the term provided in the contract or option; and (iii) a lease or option to lease providing for the temporary delivery of tribal CAP water shall require the lessee to pay to the Operating Agency all CAP fixed OM&R charges and all CAP pumping energy charges (as defined in the repayment stipulation) associated with the leased water; and the lease, subject to the condition that the term of the renegotiated lease shall not exceed 100 years; (2) no portion of the tribal CAP water may be permanently alienated; (3)(A) the Tribe (and not the United States in any capacity) shall be entitled to all consideration due to the Tribe under any contract or option to lease or exchange tribal CAP water entered into by the Tribe; and (B) the United States (in any capacity) has no trust or other obligation to monitor, administer, or account for, in any manner—(i) any funds received by the Tribe as consideration under a contract or option to lease or exchange tribal CAP water; or (ii) the expenditure of those funds; (4)(A) all tribal CAP water shall be delivered through the CAP system; and (B) if the delivery capacity of the CAP system is significantly reduced or anticipated to be significantly reduced for an extended period of time, the Tribe shall have the same CAP delivery rights as a CAP contractor or CAP subcontractor that is allowed to take delivery of water other than through the CAP system; (5) the Tribe may use tribal CAP water on or off the reservation for any purpose; (f) PROHIBITIONS.—(1) USE OUTSIDE STATE.—No tribal CAP water may be leased, exchanged, forborne, or otherwise transferred by the Tribe

Gila Basin, Arizona	Authority	Leasing Provisions
		in any way for use directly or indirectly outside the State. (2) USE OFF RESERVATION.—Except as authorized by this section and paragraph 4.7 of the Agreement, no tribal water rights under this title may be sold, leased, transferred, or used outside the boundaries of the reservation or off-reservation trust land other than pursuant to an exchange. (3) AGREEMENTS WITH ARIZONA WATER BANKING AUTHORITY.—Nothing in this title or the Agreement limits the right of the Tribe to enter into an agreement with the Arizona Water Banking Authority (or any successor entity) established by section 45-2421 of the Arizona Revised Statutes in accordance with State law. (g) LEASES.—(1) IN GENERAL.—To the extent that the leases of tribal CAP Water by the Tribe to the District and to any of the cities in the State, attached as exhibits to the Agreement, are not in conflict with the provisions of this title—(A) those leases are authorized, ratified, and confirmed; and (B) the Secretary shall execute the leases.

Divider 3

Jim Prairie

Chief, Upper Colorado Basin Research and Modeling
Group, Bureau of Reclamation



THE NATIONAL
JUDICIAL COLLEGE



Dividing
the Waters



BUREAU OF
RECLAMATION

Colorado River Basin Current Conditions and Operational Update

Santa Fe, NM

December 1, 2022

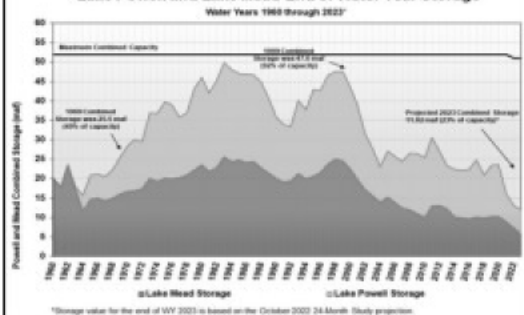
Colorado River Basin Hydrology and Use

- 1906-2020 Long-Term Record
 - 16.0 maf average annual "natural flow"
 - 14.7 maf in the Upper Basin and 1.2 maf in the Lower Basin
 - Maximum Use in 2000 at 16.9 maf
- 2000-2020 Millennial Drought
 - 13.4 maf average annual "natural flow" (from historical record)
 - 12.5 maf in the Upper Basin and 0.9 maf in the Lower Basin
 - 15.0 maf average annual "use"
 - 4.4 maf in the Upper Basin and 10.6 maf in the Lower Basin
 - 1.6 maf deficit per year, cumulative 33.6 maf



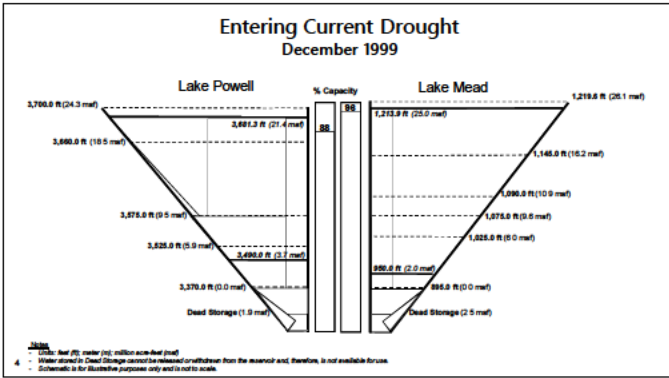
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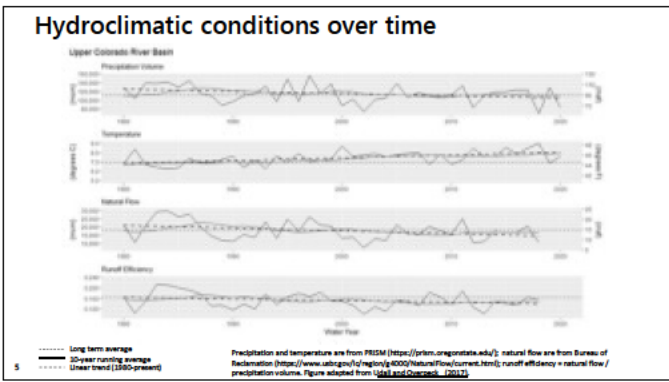
Lake Powell and Lake Mead End of Water Year Storage

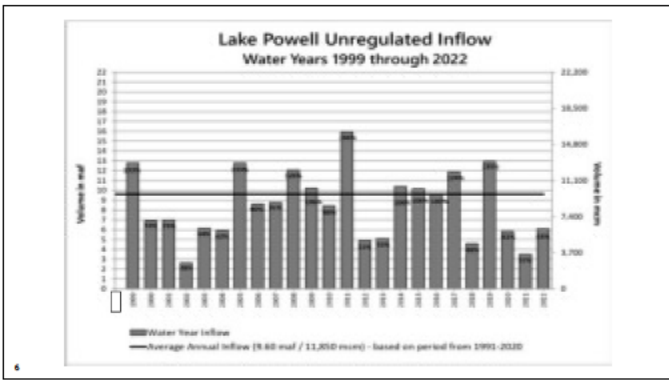


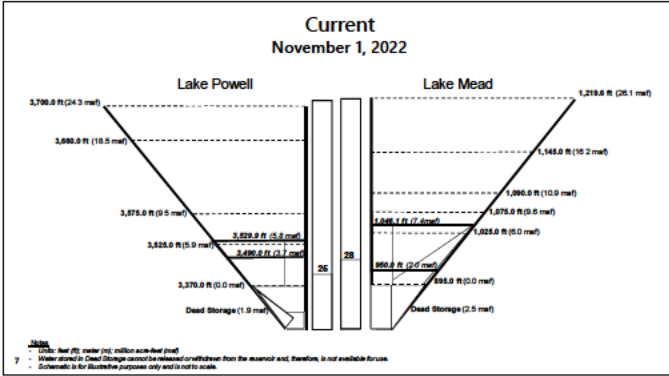
¹Storage value for the end of WY 2022 is based on the October 2022 24-Month Study projection.

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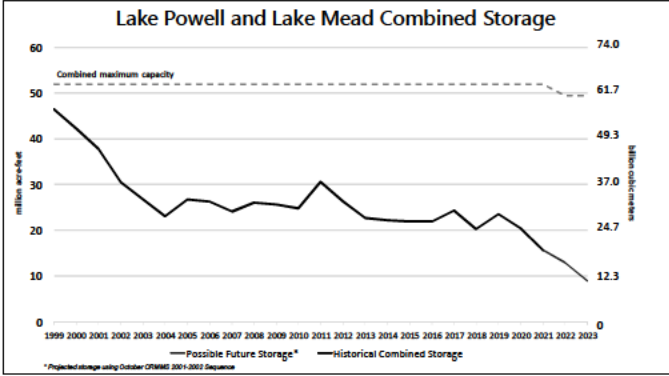


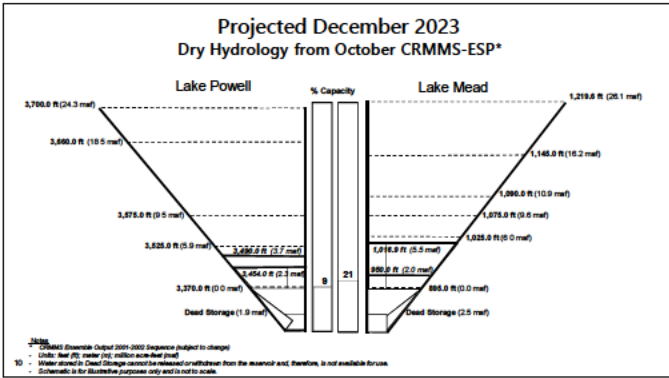


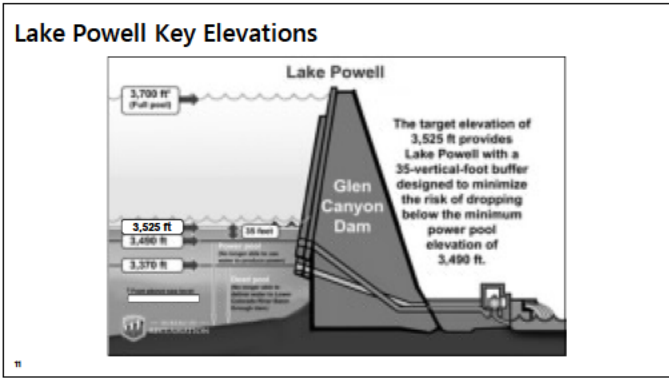
Colorado River Basin Storage (as of November 17, 2022)

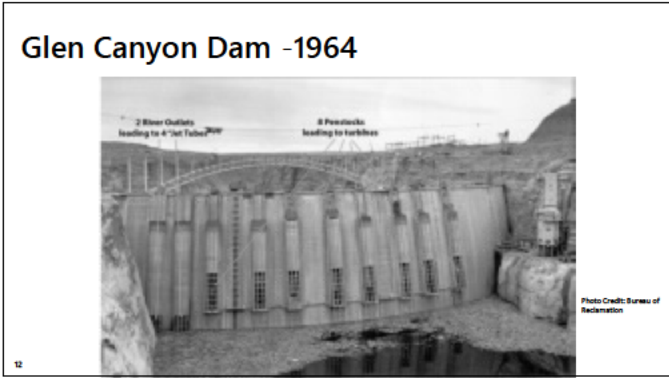
Reservoir	Percent Full	Storage (maf)	Elevation (feet)
Lake Powell	25%	5.78	3,529.0
Lake Mead	28%	7.26	1,044.1
Total System Storage	33%	19.3	- - -

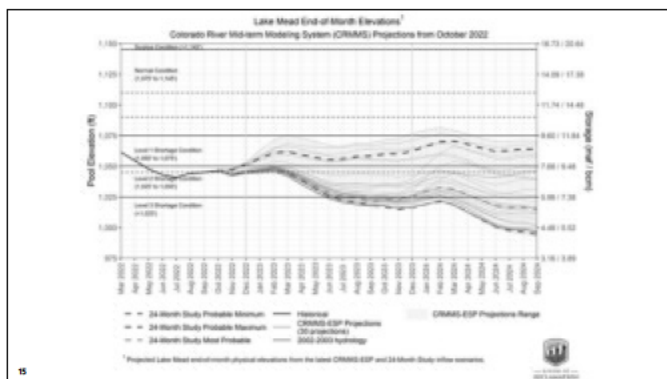
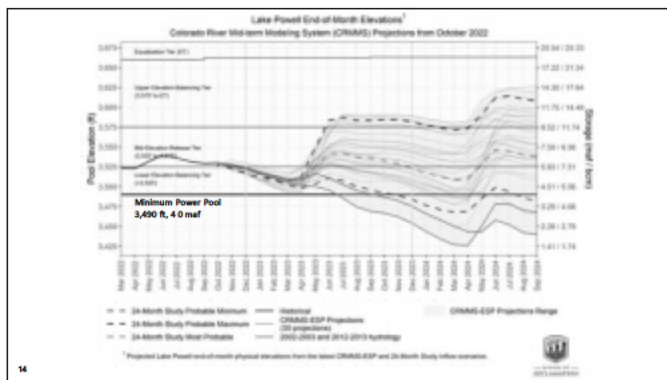
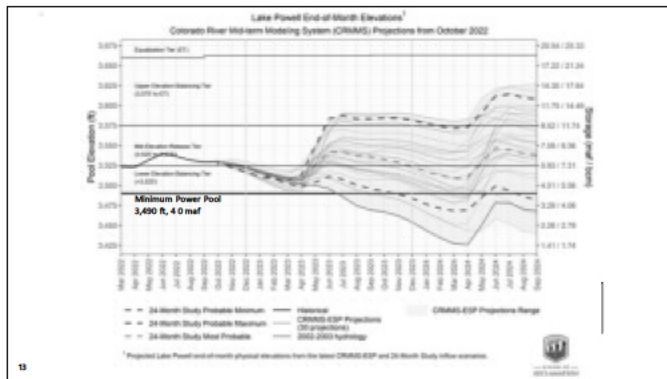
Total system storage was 38% of capacity, or 22.4 maf in storage, at this time last year.

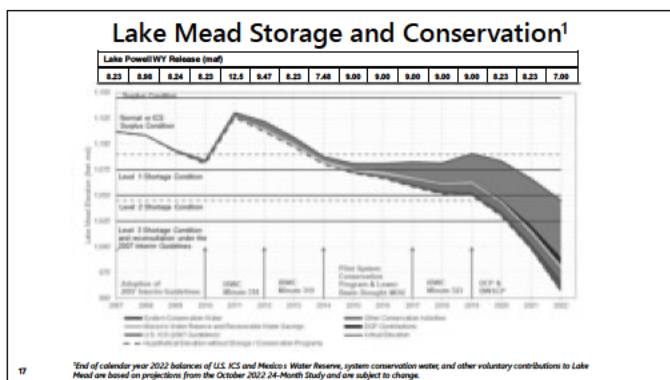
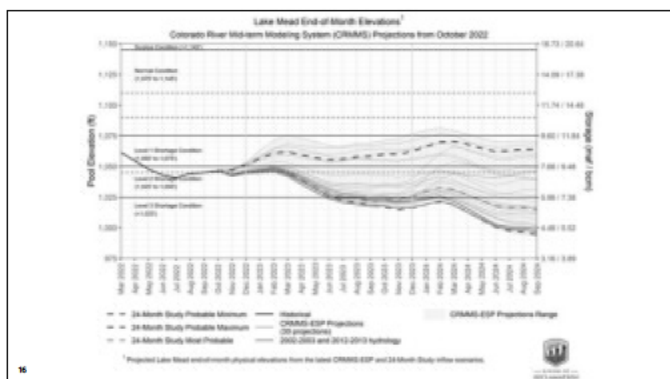












2007 Interim Guidelines, Minute 323, Lower Basin Drought Contingency Plan, and Binational Water Scarcity Contingency Plan														
Total Volumes (kaf)														
Late Seed Elevation (feet - m)	2007 Interim Guidelines Shortages		Minute 323 Conceded Reductions	Total Conceded Reductions	DCP Water Savings Contributions			Binational Water Scarcity Contingency Plan Savings	2007 Interim Guidelines or DCP Water Scarcity Contingency Plan Savings				Total Combined Volumes	
	AZ	NV			Mexico	Lower Basin States + Mexico	AZ		NV	CA	Mexico	AZ Total		NV Total
1,988 - 1,970	0	0	0	0	192	8	0	41	192	8	0	200	41	241
1,970 - 1,960	320	13	70	393	192	8	0	30	512	21	0	533	80	613
1,960 - 1,940	400	17	70	467	192	8	0	34	592	25	0	617	104	721
1,940 - 1,940	400	17	70	467	340	10	200	76	640	27	200	867	148	1,015
1,940 - 1,930	400	17	70	467	340	10	200	84	640	27	200	917	156	1,073
1,930 - 1,930	400	17	70	467	340	10	300	92	640	27	300	967	162	1,129
1,920 - 1,920	400	17	70	467	340	10	350	101	640	27	350	1,017	171	1,188
<1,920	480	20	125	625	340	10	350	110	720	30	350	1,100	178	1,278

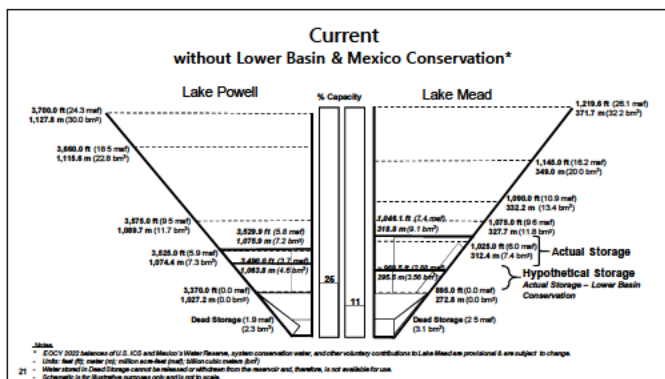
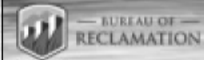
The Secretary of the Interior will take affirmative actions to implement programs designed to create or conserve 100,000 acre-feet or more of Colorado River system water to contribute to conservation of water supplies in Late Seed and other Colorado River reservoirs to the lower basin. All actions taken by the United States will be subject to applicable law, including availability of appropriations.

16

Questions?



Extra Slides



Divider 4

Jack Schmidt

Professor of Watershed Science, Director Colorado River
Studies, Utah State University

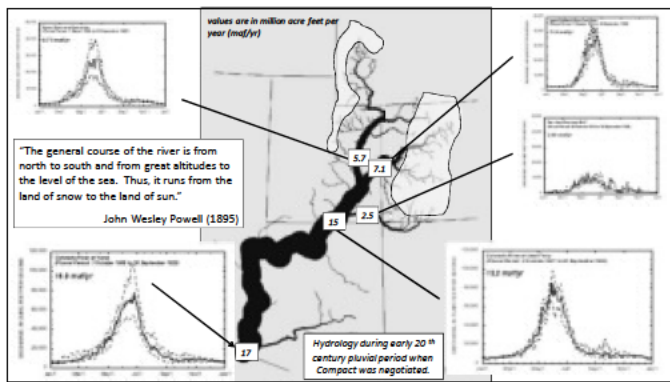


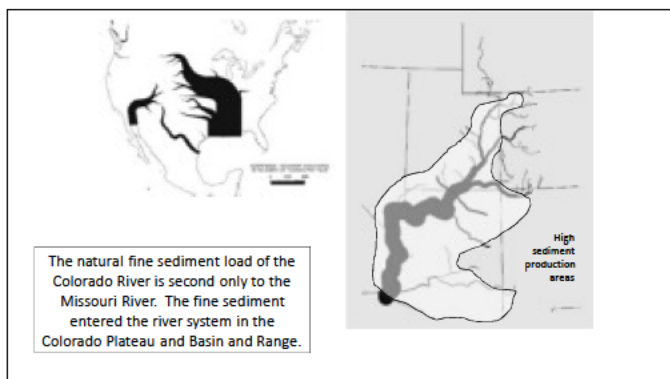
THE NATIONAL
JUDICIAL COLLEGE

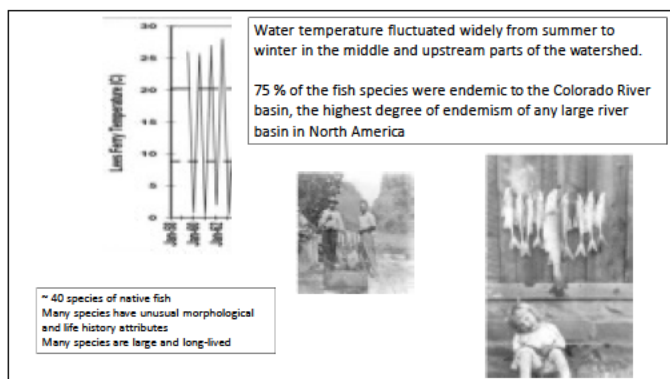


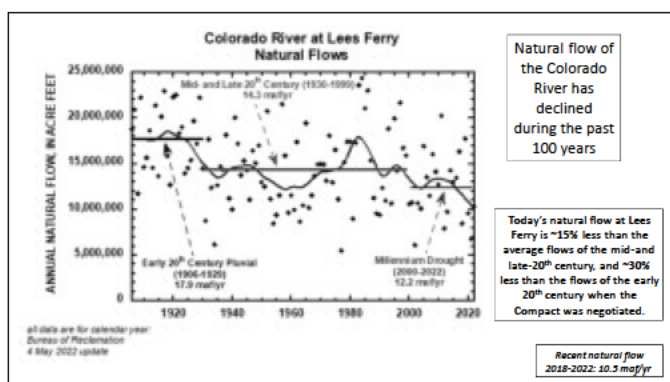
Dividing
the Waters

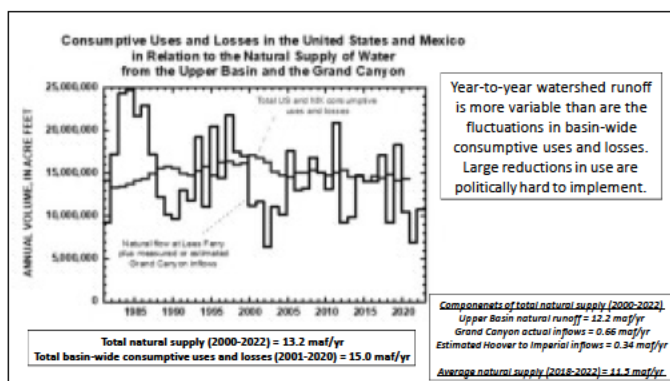


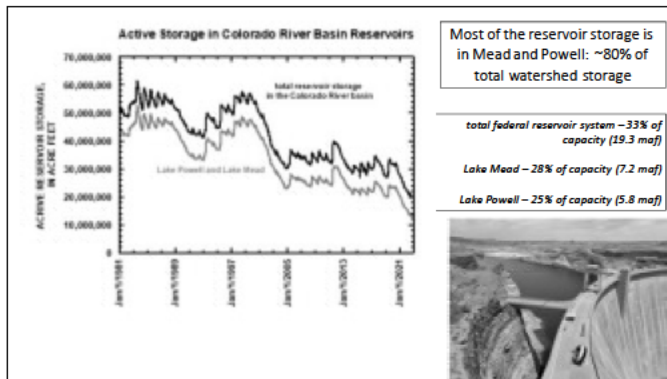


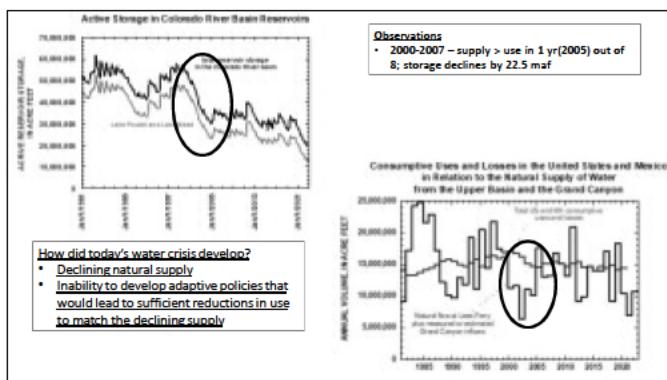


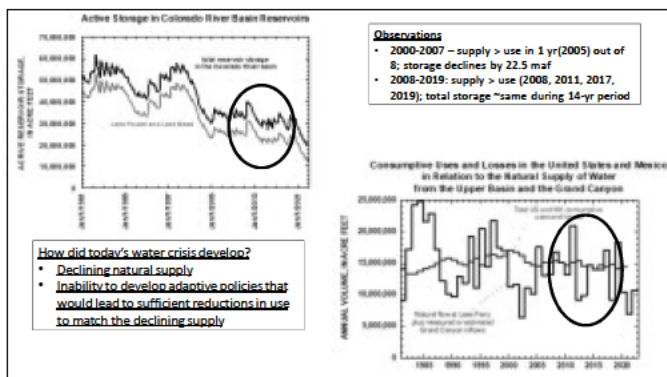


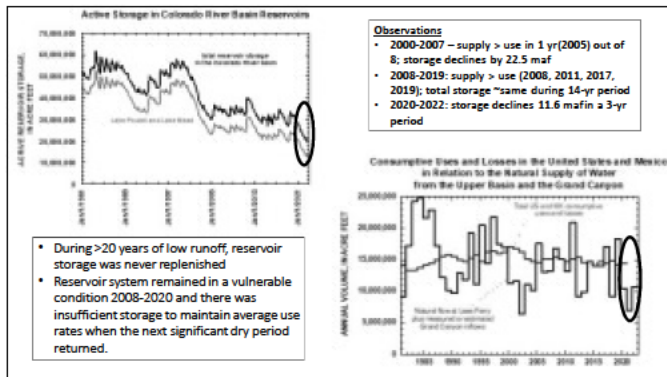


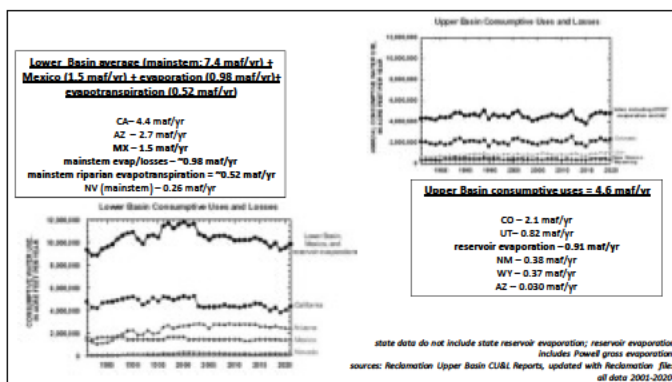


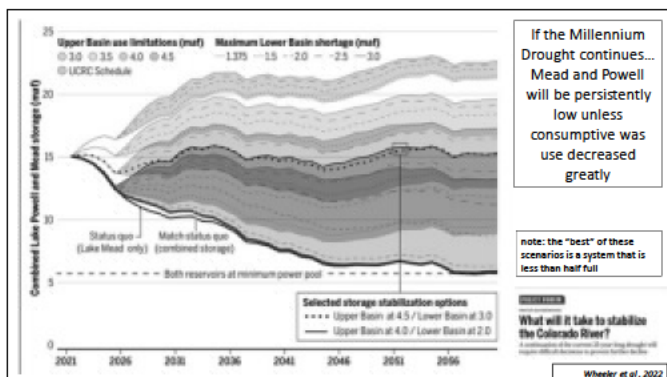




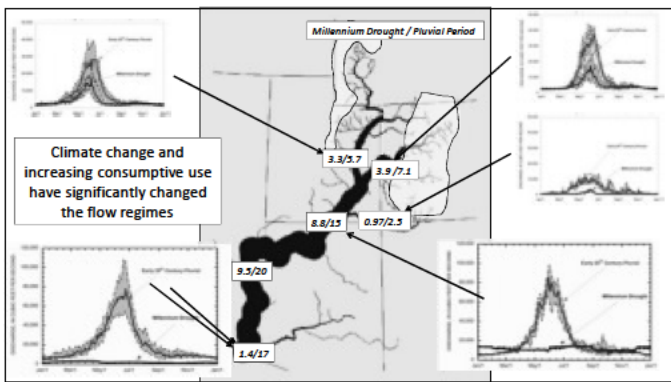


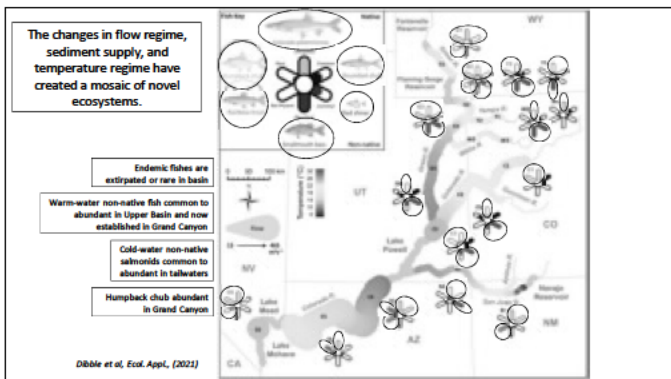


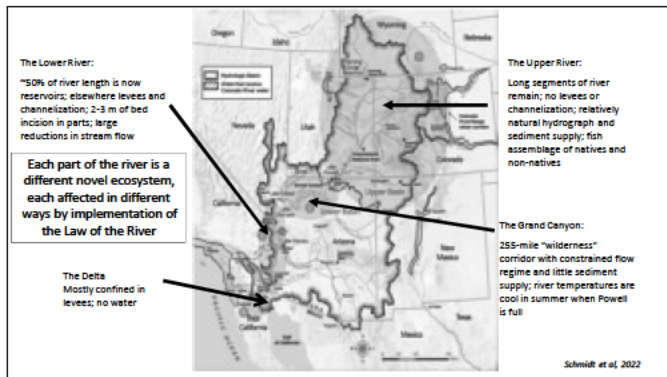


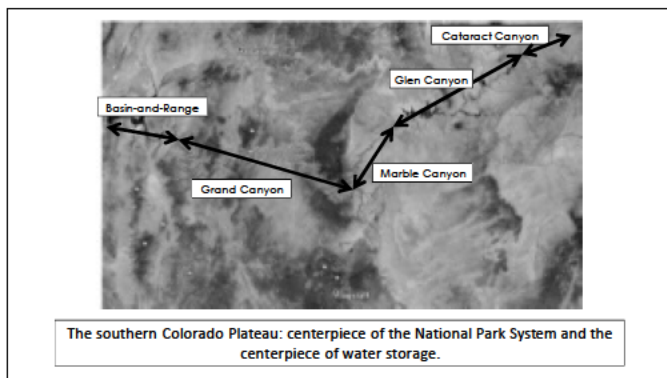


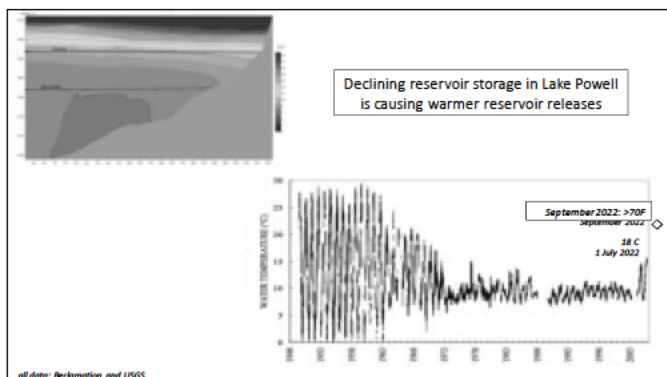


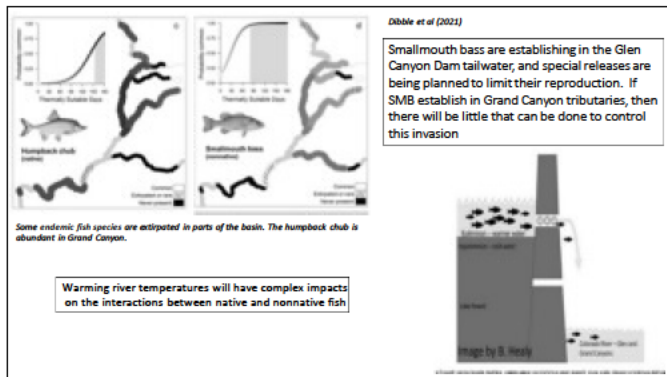


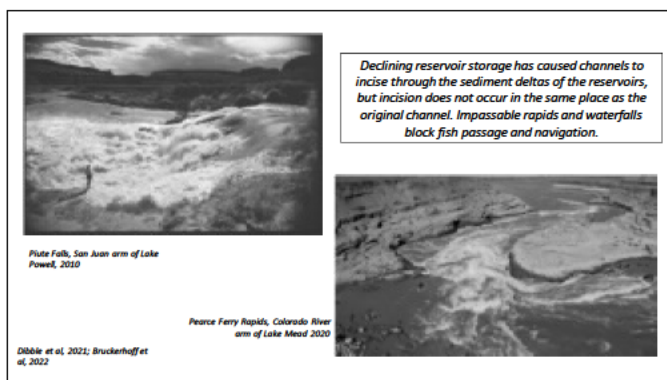


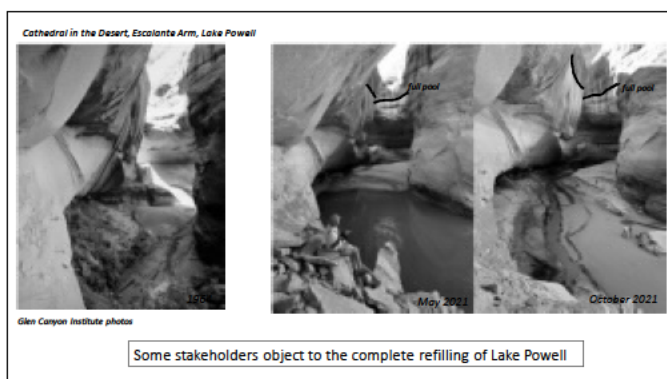




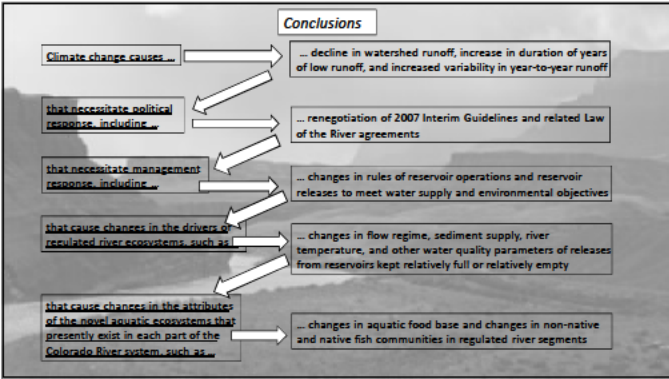








Other issues in the southern Colorado Plateau
<u>Lake Powell inflow areas</u> - value of the re-emerging ecosystems of lower Cataract Canyon and lower San Juan River Canyon - advocate for active or passive management of sediment deltas? - preserve or abandon fragmentation?
<u>Lake Powell</u> manage for reservoir recreation (houseboats, water skiing, marinas) or the emerging landscapes
<u>Glen Canyon tailwater</u> - maintain or abandon management of recreational rainbow - impacts of warming reservoir release temperatures and entrainment of non-native fish
<u>Grand Canyon</u> - future of designer flows under low reservoir and under changing monsoon seasons - Impacts of low annual releases on navigation and ecosystems
<u>Lake Mead inflow areas</u> navigation issues and fragmentation
<u>Lake Mead, Hoover Dam tailwater and Lake Mohave</u>



Divider 5

Ted Kowalski

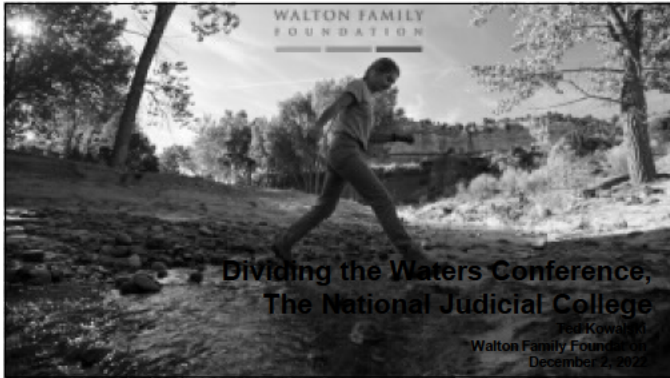
Senior Program Officer, Walton Family Foundation



THE NATIONAL
JUDICIAL COLLEGE



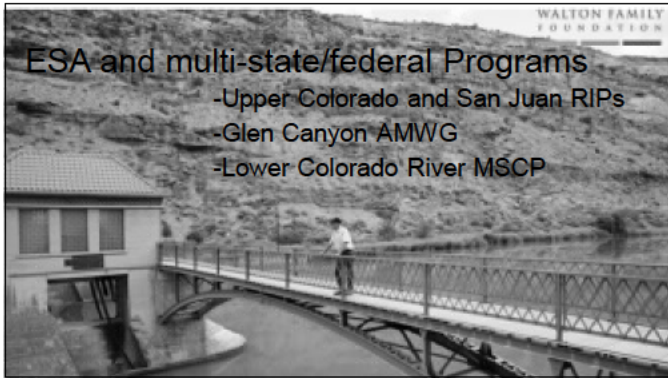
Dividing
the Waters



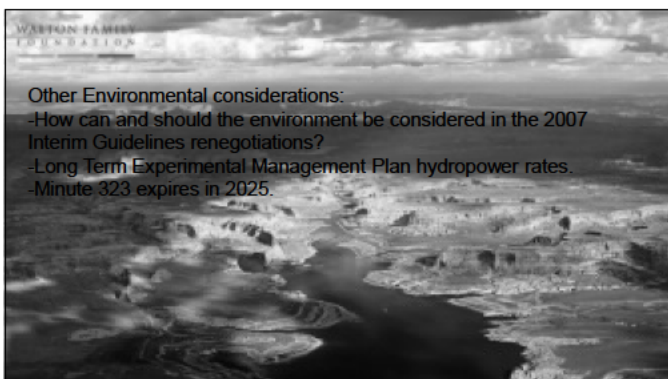




- WALTON FAMILY FOUNDATION Strategy 2025**
- Innovation**
- Use technology to improve our water management.
 - Promote innovative nature-based solutions.
- Markets**
- Help increase the demand for sustainably produced products.
 - De-risk supplies and help increase supplies to meet demand.
- Policy**
- Model policy and thought leadership.
 - Promote policy champions.
- Ecosystem of Support**
- Community-based work, leverage, communications.







MINUTE 323

- Recognizes the importance of this successful bi-national cooperation, "in light of the growing recognition of the potential adverse impacts of climate change."







Colorado River Basin, Some possible litigation:

- NEPA lawsuits, procedural.
- Environmental ESA lawsuits.
- BOR is sued (it acted).
- DOI is sued (acted as Water Master (or failed to act) or releases water related to health and safety or compact compliance in ways that water users or states disagree).
- States sue one another (orig. jurisdiction with Sup. Ct.).
- Water users sue state agencies.
- Water users sue water users.
- Tribes sue related to federal trust resp.
- Compact or ESA trumps?
- Groundwater?
- Mexico sues in international court under treaty.



Other paths forward:

LITIGATION:

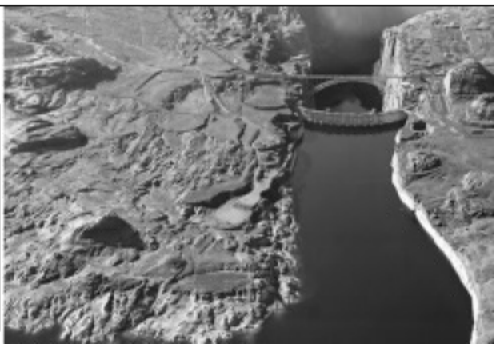
- Takes a loooooong time.
- Only solves the legal questions raised, and for the specific parties involved.
- Creates adversarial atmosphere.
- Does not allow for creativity, and hands the decisions off to others, who are more removed from the issues and the possible solutions.



WALTON FAMILY
FOUNDATION

**Funding
should help!**

- -\$8.3 billion in the Bipartisan Infrastructure Law.
- -\$4 Billion in the Inflation Reduction Act for Western Drought.
- \$20 Billion for Climate Smart Ag











Divider 6

Jason Robison

Professor, University of Wyoming College of Law, Lead
Editor, Cornerstone of the Confluence: Navigating the
Colorado River Compact's Next Century



THE NATIONAL
JUDICIAL COLLEGE



Dividing
the Waters

From *Winters* to the 2026 Guidelines: Tribal Water Rights in the Colorado River Basin



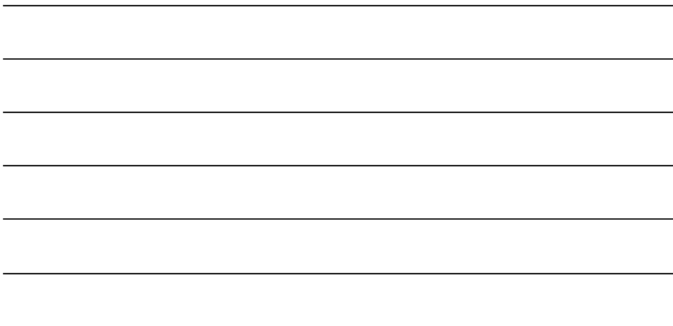
Jason Anthony Robison
Professor, University of Wyoming College of Law
Chair, Colorado River Research Group
Editor, *Cornerstone at the Confluence:
Navigating the Colorado River Compact's Next Century*

Dividing the Waters 2022 General Conference
"Confirmed and Unconfirmed Native American
Water Rights in the Colorado River Basin" Panel
Santa Fe, NM
December 1, 2022

Overview

- I. Assimilation & Water Colonialism
- II. Termination & Adjudication
- III. Self-Determination & Settlements
- IV. Synthesis







WINTERS v. THE UNITED STATES.

APPEAL FROM THE CIRCUIT COURT OF APPEALS FOR THE NINTH
CIRCUIT.

No. 158. Argued October 24, 1907.—Decided January 9, 1908.



Source: Wikimedia Commons

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WINTERS v. THE UNITED STATES.

APPEAL FROM THE CIRCUIT COURT OF APPEALS FOR THE NINTH
CIRCUIT.

No. 158. Argued October 24, 1907.—Decided January 9, 1908.



Justice Joseph McKenna

be considered that are prominent and significant. The reservation was a part of a very much larger tract which the Indians had the right to occupy and use and which was adequate for the habits and wants of a nomadic and uncivilized people. It was the policy of the Government, it was the desire of the Indians, to change those habits and to become a pastoral and civilized people. If they should become such the original tract was too extensive, but a smaller tract would be inadequate without a change of conditions. The lands were arid and, without irrigation, were practically valueless. And yet, it is con-



Source: Wikimedia Commons

Wikimedia Commons



ARTICLE VII

Nothing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes.



ARTICLE VIII

Present perfected rights to the beneficial use of waters of the Colorado River System are unimpaired by this compact. Whenever storage capacity

Termination & Adjudication



ARTICLE VII

The consumptive use of water by the United States of America or any of its agencies, instrumentalities or wards shall be charged as a use by the State in which the use is made; provided, that such con-

Arizona v. California



Justice William Brandt



Warren Court (1953-1969)



Justice William Brandt

We also agree with the Master's conclusion as to the quantity of water intended to be reserved. He found that the water was intended to satisfy the future as well as the present needs of the Indian Reservations and ruled that enough water was reserved to irrigate all the practicably irrigable acreage on the reservations. Arizona,

TITLE 43 - PUBLIC LANDS
CHAPTER 15 - APPROPRIATION OF WATERS; RESERVOIR SITES

§ 666. Suits for adjudication of water rights

(a) **Joinder of United States as defendant; costs.**

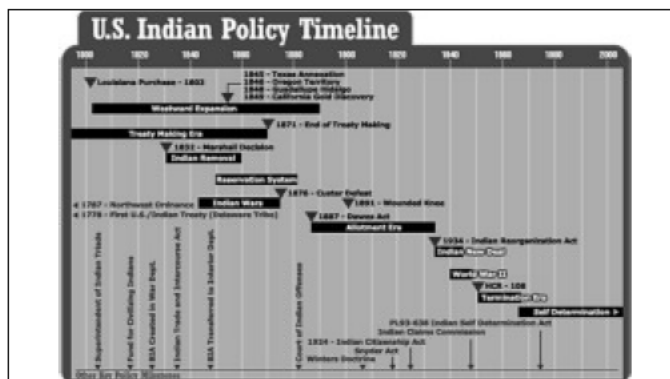
Consent is given to join the United States as a defendant in any suit

- (1) for the adjudication of rights to the use of water of a river system or other source, or
- (2) for the administration of such rights, where it appears that the United States is the owner of or is in the process of acquiring water rights by appropriation under State law, by purchase, by exchange, or otherwise, and the United States is a necessary party to such suit. The United States, when a party to any such suit, shall
 - (1) be deemed to have waived any right to plead that the State laws are inapplicable or that the United States is not amenable thereto by reason of its sovereignty, and
 - (2) shall be subject to the judgments, orders, and decrees of the court having jurisdiction, and may obtain review thereof, in the same manner and to the same extent as a private individual under like circumstances. Provided, That no judgment for costs shall be entered against the United States in any such suit.



Woodrow Wilson

Self-Determination & Settlements



McCarran Amendment Jurisprudence



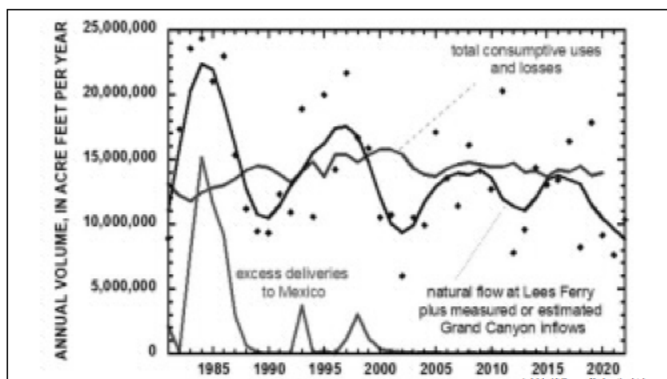
- *Dugan v. Rank*, 372 U.S. 609 (1963)
- *Eagle County*, 401 U.S. 520 (1971)
- *Colorado River*, 424 U.S. 800 (1976)
- *San Carlos*, 463 U.S. 545 (1983)

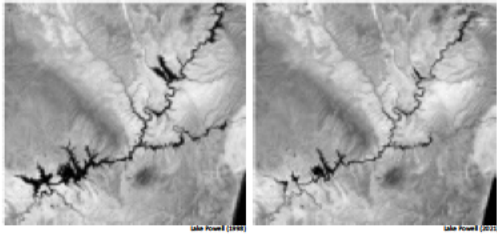
UNIVERSITY OF MICHIGAN WATER LAW REVIEW	UNIVERSITY OF MICHIGAN WATER LAW REVIEW
VOLUME 2	VOLUME 2
WINTER 1966	WINTER 1966
DIVIDING WESTERN WATERS: A CENTURY OF ADJUDICATING RIVERS AND STREAMS	
JAMES C. THOMSON, ROBERT L. KIRBY, ANDREW A. CERRASO, AND JAMES R. GIBSON	
I. COMMENTARY ON MAJOR GENERAL STRONG ADJUDICATIONS	
A. Response to the Comprehensive General Strongs	
1. The Longstanding Misuse of Federal Reclamation	
2. Water Rights	
3. The Reclamation of Indian Settlements	
4. Reclamation of Western States	
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Colorado River Basin Settlements

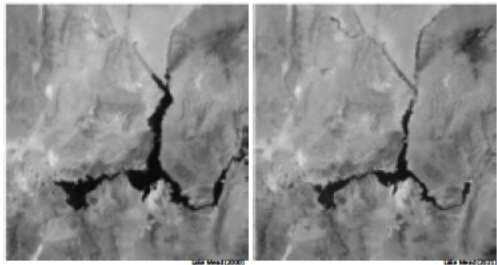
- Ak-Chin Indian Water Rights Settlement Act (1978)
- Southern Arizona Water Rights Settlement Act (1982)
- Salt River Pima-Maricopa Indian Community Water Rights Settlement Act (1988)
- Fort McDowell Indian Community Water Rights Settlement Act (1990)
- Jicarilla Apache Tribe Water Settlement Act (1992)
- San Carlos Apache Tribe Water Rights Settlement Act (1992)
- Ute Indian Rights Settlement Act (1992)
- Yavapai-Prescott Indian Tribe Water Rights Settlement Act (1994)
- Colorado Ute Settlement Act Amendments (2000)
- Shivwits Band of Paiute Indian Tribe of Utah Water Rights Settlement Act (2000)
- Zuni Indian Tribe Water Rights Settlement Act (2003)
- Arizona Water Settlements Act (2004)
- Northwestern New Mexico Rural Water Projects Act (2009)
- White Mountain Apache Tribe Water Rights Quantification Act (2010)
- Bill Williams River Water Rights Settlement Act (2014)
- Navajo-Utah Water Rights Settlement (2020)

Synthesis

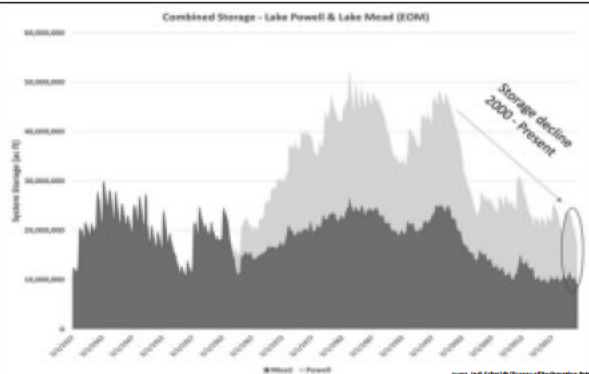




Source: U.S. Geological Survey



Source: NASA Earth Observatory



Source: JPL School (Division of Earth and Space Sciences)



**Review of the Colorado River
Irrigation Guidelines for Lower Basin
Shortages and Coordinated
Operations for Lake Powell and
Lake Mead**

Open Public Review of Draft Report



10/18/2019 10:00 AM

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6.3 Stakeholder Engagement

Multiple communities expressed an interest in including a review of the stakeholder engagement process used during the development of the Guidelines with particular attention to what they view as inadequate efforts to meaningfully engage a sufficiently diverse group of stakeholders. An area of their specific concern is whether there was an appropriate level of tribal participation. In addition to currently unquantified rights, Reclamation recognizes that tribes hold quantified rights to a significant amount of water from the Colorado River and its tributaries (approximately 3.4 maf of annual diversion rights) that often are senior in priority to those held by other users. The United States has a trust responsibility to protect federal Indian reserved water rights.



Table 2 - Recognized Rights for Upper Basin Tribes⁴⁹

Reservation/Tribe	State	Process	Total Acre-Foot/Year
Ute Indian Tribe (Klamath-Churo)	UT	Federally-Adjusted Tribal Rights	2,791,250 AF
Southern Ute Indian Tribe	CO	Colorado-Ute Indian Water Rights Settlement Act of 1980 ⁵⁰	1,285,919 AF
Ute Mountain Ute Tribe	CO	Colorado-Ute Indian Water Rights Settlement Act of 1980 ⁵¹	1,000,184 AF
Navajo Nation	NM	Navajo-Ute Water Rights Settlement Act of 1980 ⁵²	475,000 AF
Navajo Nation	NM	Navajo-Ute Water Rights Settlement Act of 1980 ⁵³	475,000 AF
Navajo Nation	UT	Navajo-Ute Water Rights Settlement ⁵⁴	811,300 acre-feet/year
Total			6,542,653

Table 3 - Recognized Rights for Lower Basin Tribes²² (continued on next page)

Tribal	State	Process	Total Acre Feet/Year
Abino Indian Community	AZ	Abino Indian Water Rights Settlement Act of 1970 ²³	63,800 ²⁴
Chiricahua Indian Tribe	CA	Arizona-California	11,340 ²⁵
Colorado River Indian Tribe	AZ	Arizona-California	60,470 ²⁶
Colorado River Indian Tribe	AZ	Arizona-California	465,400 ²⁷
Colorado River Indian Tribe	CA	Arizona-California	54,800 ²⁸
Fort McDowell-Wanapum Nation	AZ	Fort McDowell Indian Community Water Rights Settlement Act of 1990 ²⁹	54,750 ³⁰
Hi-Wagon Indian Tribe	AZ	Arizona-California	204,520 ³¹
Hi-Wagon Indian Tribe	CA	Arizona-California	55,730 ³²
Hi-Wagon Indian Tribe	WY	Arizona-California	11,534 ³³
Yukon River Indian Community	AZ	Arizona Water Settlements Act of 2004 ³⁴	453,580 ³⁵
Yukon River	AZ	Bill Williams River Water Rights Settlement Act of 2014	494 ³⁶
Yukon River Tribe	AZ	CAP Contract dated December 15, 1980 ³⁷	500 ³⁸
Yukon River Tribe	AZ	Arizona-California	4,900
Yukon River Tribe	CA	Arizona-California	15,410
Yukon River Water Resources Indian Community	AZ	Yukon River Water Rights Indian Community Water Rights Settlement Act of 1984 ³⁹	115,400 ⁴⁰
San Carlos Apache Tribe	AZ	San Carlos Apache Water Rights Settlement Act ⁴¹	27,400 ⁴²
Tahono (O'odham) Nation	AZ	Southern Arizona Water Rights Settlement Act of 1991 (2000) ⁴³	14,000 ⁴⁴
White Mountain Apache Tribe	AZ	White Mountain Apache Tribe Water Rights Contribution Act of 2000 ⁴⁵	48,000 ⁴⁶
Nezper Apache Nation	AZ	CAP Contract dated December 15, 1980 ⁴⁷	1,700 ⁴⁸
Nezper Apache Tribe	AZ	Nezper Apache Indian Tribe Water Rights Settlement Act of 1994 ⁴⁹	1,700 ⁵⁰
San Indian Tribe	NM	San Indian Tribe Water Rights Settlement Act of 2003 ⁵¹	25,000
Total			1,980,400⁵²

Table 3 - Unresolved Tribal Water Rights

Tribal	State	Status ⁵³	Total Acre Feet/Year
Nezper	AZ	Outstanding	Not available
Hopi	AZ	Outstanding	Not available
Hualapai	AZ	Settlement pending congressional action	1,414 to 4,000
Kibab Plateau Band	AZ/UT	Outstanding	Not available
Navajo Nation	AZ	Settlement negotiations ongoing	Not available
Pineau Nation	AZ	Outstanding ⁵⁴	Not available
San Carlos Apache Tribe	AZ	Outstanding	Not available
San Juan Southern Ute Tribe	AZ/UT	Outstanding	15,500 ⁵⁵
Tahono (O'odham) Nation	AZ	Settlement negotiations ongoing (CAP O'odham O'odham)	6,000
Yukon Apache Tribe	AZ	Settlement negotiations ongoing	Not available
Yukon Indian Tribe (Shoshone)	UT	Pending litigation	170,370 ⁵⁶
Nezper Apache Nation	AZ	Settlement negotiations ongoing	Not available
Total			464,000

The Path Forward

Twenty-two of the 30 federally recognized tribes in the Colorado River Basin have recognized rights to use approximately 22 to 26 percent of the Basin's average annual water supply. Twelve of the 30 Basin tribes have unresolved water rights claims, which will likely increase the overall percent of tribal water rights in the Basin. Tribal water rights are accounted for within the apportionment of the states where the water use occurs and are generally senior to most state-based water rights.

The process of developing the management framework that will replace the 2007 Interim Guidelines and the 2019 Drought Contingency Plan provides a unique opportunity for tribal leaders to work with the federal government, the seven basin states, and various water users and stakeholders to address tribal needs, interests, and priorities alongside other basin interests in water use, development, and conservation.



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COMMUNITY IN THE COLORADO RIVER BASIN

JASON ROBISON,* MATTHEW MCKINNEY** & DARYL VIGIL***

ABSTRACT

Something historic is happening right now in the Colorado River Basin. Domestic and international negotiations over the next several years will yield a new management framework for the Colorado River system from which more than forty-million people draw the essence of life. Climate change looms over these negotiations—an ongoing twenty-one-year megadrought unprecedented in the historical record. Although the basin is a place of incredible diversity—a “community of communities”—you might not know it from institutions devised thus far for Colorado River governance. Some progress has been made with these institutions in recent decades, and collaboration has been instrumental, including with tribal sovereigns whose ancestral homelands and modern reservations span across the basin. But more needs to be done. This Article advocates for an elevated commitment to collaboration in the new management framework’s negotiation and beyond. Next-generation Colorado River governance institutions should be created that align with the whole community of communities.

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* Professor, University of Wyoming, College of Law. S.J.D., Harvard Law School (2013); LL.M., Harvard Law School (2009); J.D., University of Oregon School of Law (2006); B.S., Environmental Studies, University of Utah (2003). This Article is dedicated to the brilliant, passionate leaders of the 30 Colorado River Basin tribes who have joined together in the recently established Tribal Leaders Forum. Your inspiring voices will shape the basin’s future, and we admire you and your work. We have incurred a host of debts while preparing this piece, including stemming from conversations with and feedback provided by Robert Adler, John Berggren, Lindsey Bruckerhoff, John Fleck, Doug Kenney, Larry MacDonnell, Marianna Rivera-Torres, Jack Schmidt, and Jian Wang. Many thanks for sharing your ideas about and aspirations for Colorado River governance. Any errors or omissions are ours alone.

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I. INTRODUCTION

“The waters of to-day have values and must be divided; the waters of the morrow have values, and the waters of all coming time, and these values must be distributed among the people. How shall it be done?”¹ We’re still grappling with this question posed by John Wesley Powell in 1890. His answer to it was all about connections—at least as far as his eyes could see. One aspect of these connections had to do with the contours of the Western landscape and its arterial river systems. These bloodlines combine to “form the drainage system of a hydrographic basin, a unit of country well defined in nature, . . . bounded above and on each side by

1. John Wesley Powell, *Institutions for the Arid Lands*, 40 CENTURY MAG. 111, 113 (1890).

heights of land that rise as crests to part the waters.”² A corollary aspect had to do with the landscape’s human inhabitants. “Such a district of country is a commonwealth by itself,” professed Powell, “[t]he people who live therein are interdependent.”³ Out of this proverbial soil of connectivity grew Powell’s grand yet ultimately unrealized vision: “that the entire arid region be organized into natural hydrographic districts, each one to be a commonwealth within itself.”⁴ Nested in this fashion, it would fall to the people of each commonwealth to “make their own laws for the division of the waters, for the protection and use of the forests, for the protection of the pasturage on the hills, and for the use of the [water] powers.”⁵

It almost sounds like community. But that would be a stretch. Or, put differently, the connections didn’t stretch that far in Powell’s time. Not all Westerners *belonged* in his watershed commonwealths. Only some were top of mind. “It should be remembered that the far West is no longer an uninhabited region,” Powell admonished, revealing thick cultural blinders.⁶ When had the “far West” been “uninhabited”? Not for millennia when accounting for Native peoples, and not for centuries when considering Spanish and Mexican communities.⁷ Yet they were practically invisible in Powell’s vision.⁸ It was focused elsewhere—toward “intelligent, industrious, enterprising” Euro-American immigrants colonizing the western United States, a people “wide awake to their interests,” whose “hearts beat high with hope,” and whose “aspirations are for industrial empire.”⁹ “On this round globe and in all the centuries of human history,” gushed Powell, “there has never before been such a people.”¹⁰ It was this “people,” not others, who would be included. They would create the commonwealths, participate in self-governance, and make lives and livelihoods involving familiar relationships with other parts of nature: planting towns and cities “on the mountainsides,” operating “stupendous mining enterprises,” erecting saw mills on the streams supplied by the “woodsman’s ax” in the forest, covering the hills with “flocks and herds,” and

2. *Id.*

3. *Id.* at 113–14.

4. *Id.* at 114.

5. *Id.* To be clear, Powell’s watershed-commonwealths proposal involved nuanced, tiered roles for the local, state, and federal (“general” in his jargon) governments. *Id.* at 114–15.

6. *Id.* at 115.

7. See *infra* Part II.A–B.

8. Powell did briefly mention the communitarian, centuries-old irrigation communities transplanted to what had become the U.S. Southwest during the Spanish and Mexican periods. *Id.* at 112.

9. *Id.* at 115.

10. *Id.*

cultivating the valleys with vineyards, fields, orchards, and gardens.¹¹ Of course, Powell's commonwealths reflected just one conception of "community."¹²

It's time to say a few things about that word as it applies in the Colorado River Basin.

One thing is that the singular form seems dead wrong. How can "community" be used in reference to a 244,000-square-mile watershed encompassing a river system whose flows supply water to over forty-million people?¹³ Pluralization appears necessary. There are layers upon layers of communities in this space.¹⁴ For starters, the Colorado River Basin is replete with ecosystems—aquatic, riparian, desert, forest, tundra—teeming with biotic life and non-living things.¹⁵ Human beings are one species of these ecosystems, but they are far more extensive, complex communities.¹⁶ Even focusing solely on people, however, the singular form falls short. Consider the vast metropolises and megapolises hooked up to Colorado River system water—Los Angeles, Phoenix, San Diego, Denver, Las Vegas, Salt Lake City, Tucson, and Albuquerque, among others.¹⁷ Contrast these urban oases with the numerous agricultural communities collectively irrigating nearly 4.5 million acres in and around the basin.¹⁸ And lest we overlook the thirty tribal sovereigns whose ancestral homelands and modern reservations lie within this magical place,¹⁹

11. *Id.*

12. For a rich examination of how certain aspects of Powell's watershed commonwealths might be translated into contemporary Colorado River governance, see Robert W. Adler, *Communitarianism in Western Water Law and Policy: Was Powell's Vision Lost?*, in VISION & PLACE: JOHN WESLEY POWELL & REIMAGINING THE COLORADO RIVER BASIN 28 (Jason Robison, Daniel McCool & Thomas Minckley eds., 2020).

13. Lawrence J. MacDonnell, *Colorado River Basin*, in 4 WATER AND WATER RIGHTS 6 (Amy K. Kelley ed., 2011); Press Release, The Bureau of Reclamation, Interior and States Sign Historic Drought Agreements to Protect Colorado River (Feb. 20, 2019), <https://www.usbr.gov/newsroom/newsrelease/detail.cfm?RecordID=66103>.

14. For an overview of these communities, see Manuel Chaz Baculi et al., *The Hardest Working River in the West*, BABBITT CTR FOR LAND & WATER POL'Y, <https://storymaps.arcgis.com/stories/2efeafc8613440dba5b56cb83cd790ba> (last visited Feb. 8, 2021).

15. See generally ROBERT W. ADLER, RESTORING COLORADO RIVER ECOSYSTEMS: A TROUBLED SENSE OF IMMENSITY (2007).

16. The definition of "ecosystem" speaks to this point: "the complex of a *community* of organisms and its environment functioning as an ecological unit." *Ecosystem*, MERRIAM-WEBSTER, <https://www.merriam-webster.com/dictionary/ecosystem> (last visited Feb. 8, 2021) (emphasis added).

17. BUREAU OF RECLAMATION, COLORADO RIVER BASIN STAKEHOLDERS MOVING FORWARD TO ADDRESS CHALLENGES IDENTIFIED IN THE COLORADO RIVER BASIN WATER SUPPLY AND DEMAND STUDY: PHASE I REPORT: EXECUTIVE SUMMARY 2 fig. 1 (2015), <https://www.usbr.gov/lc/region/programs/crbstudy/MovingForward/Phase1Report/ExecSumm.pdf> [hereinafter MOVING FORWARD REPORT].

18. *Id.* at 1.

19. See TEN TRIBES PARTNERSHIP & BUREAU OF RECLAMATION, COLORADO RIVER BASIN TEN TRIBES PARTNERSHIP TRIBAL WATER STUDY: STUDY REPORT appx. 1B-1 (2018) (providing map of twenty-nine tribes')

or the pervasive federal lands where millions of visitors interact with the river system, including the Grand Canyon.²⁰ The system's flows are used and valued distinctly by these diverse communities.²¹ But used and valued they are. Which water users get to access the resource and which do not? This question throws into relief a final, critical human layer: the network of federal, state, local, and sometimes tribal officials vested with decision-making authority over the Colorado River system.²²

That's a lot of layers—though a gross simplification of the real fabric—but it tees up a contrary and paradoxical thing that needs to be said about “community.” Its singular form is actually dead on when used in reference to the Colorado River Basin. From a twenty-first-century perspective, Powell got something profoundly right in his watershed-commonwealths proposal—the part about connections, despite how they were conceived in ethnocentric, now antiquated ways. The river's mainstem and tributaries do combine to form “the drainage system of a hydrographic basin, a unit well defined in nature,”²³ even with its human bifurcation via the Colorado River Compact.²⁴ And as for the wide-ranging human communities—those using the basin's flows, consumptively and non-consumptively, as well as those engaged in governance—their distinct, sometimes conflicting natures are clear as day. Equally so, however, is their common, unmistakable connection. It is the river system—the lifeblood of *all* the human communities and ecosystems of which they are a part.

So the Colorado River Basin is a *community of communities*. That's the bottom line. Why tease it out now? To influence the course of history—nothing less—as that's exactly what's being made at the time of this writing. Between now and 2026, a new management framework for the Colorado River system will be negotiated—with domestic and international pieces—ushering in the next chapter in the history

reservations in basin) [hereinafter TRIBAL WATER STUDY]. The Tribal Water Study did not note the San Juan Southern Paiute Tribe, which is a federally recognized tribe living on traditional territory within the Navajo Reservation. *About the Tribe*, SAN JUAN SOUTHERN PAIUTE TRIBE, <https://www.sanjuanpaiute-nsn.gov/about> (last visited April 23, 2021). All of the Tribal Water Study documents can be found at BUREAU OF RECLAMATION, COLORADO RIVER BASIN TEN TRIBES PARTNERSHIP: TRIBAL WATER STUDY REPORT, LOWER COLORADO REGION, <https://www.usbr.gov/lc/region/programs/crbstudy/tws/finalreport.html>.

20. For a map of federal lands in the Colorado River Basin, see VISION & PLACE, *supra* note 12, at 98. As just one illustration, annual visitation to Grand Canyon National Park has hovered around six-million people over the past several years. *Grand Canyon*, NATIONAL PARK SERVICE, <https://www.nps.gov/grca/learn/management/statistics.htm#onthisPage-6> (last visited April 24, 2021).

21. See, e.g., Jason Robison et al., *Challenge & Response in the Colorado River Basin* 16 WATER POL'Y 12, 18–19 (2014) (discussing value pluralism in the era of limits).

22. JOHN FLECK, WATER IS FOR FIGHTING OVER AND OTHER MYTHS ABOUT WATER IN THE WEST 9–11 (2016).

23. Powell, *supra* note 1, at 113.

24. Article I divides the basin into an “Upper Basin” and a “Lower Basin” at Lee Ferry, Arizona. Colorado River Compact, 1923 Colo. Sess. Laws 684, Colo. Rev. Stat. § 37-61-101 to -104 (2019) [hereinafter Compact]. See also *Id.* at Arts. II(e)-(g) (defining “Lee Ferry,” “Upper Basin,” and “Lower Basin”).

of Colorado River governance.²⁵ In whatever form it ultimately appears, this framework will implement the cornerstone of the complex, nearly century-old body of laws and policies governing the system—colloquially, the “Law of the River.” That cornerstone is the Colorado River Compact.²⁶ So, too, will the new framework inevitably touch on a venerable institution at the international border, a treaty over the Colorado River forged by the United States and Mexico in the mid-twentieth century.²⁷ Flow obligations connect these two components of the Law of the River and set water budgets in both countries.²⁸ It is these flow obligations, among other pressing matters, that the framework must navigate—and in unprecedented circumstances to boot: amidst a twenty-one-year megadrought that is more severe than any in recorded history and portends regional aridification.²⁹ That will be the negotiating climate (pun intended). It is one requiring earnest, transparent thoughts and deeds in relation to the concept introduced above: “community.” How has it historically been understood and approached? What should it mean as the basin’s community of communities looks ahead?

Short answer for the future: collaboration. Colorado River governance has increasingly taken this tack. It reflects the reality of the basin as a community of communities. And it’s how the new management framework should be negotiated and implemented. That’s this Article’s thesis. It applies with special force to the engagement of tribal sovereigns, but extends further to the full scope of communities connected to the river system—those whose voices historically have been marginalized, alongside those whose voices have been power.

Rolling out this thesis, Part II starts with a sense of place, briefly outlining the Colorado River Basin’s physical geography, but spending considerable time with its human history, particularly across the four centuries preceding the Law of the River’s genesis in 1922. While the dynamic layers of community over this period are critical to understand from a relationship standpoint, they are often poorly understood or ignored in contemporary dialogue about the Colorado River system. Real relationships *cannot* be built until that changes. Against this backdrop, Part III turns to governance institutions, partly as revealed by the Law of the River’s core

25. These negotiations are taking place due to the general expiration of three key instruments in 2025 and 2026—the 2007 Interim Guidelines, Minute 323 to the U.S.-Mexico Treaty, and the 2019 Drought Contingency Plans—all of which are discussed *infra* Part III.B.3.

26. Compact, *supra* note 24.

27. Utilization of the Waters of the Colorado and Tijuana Rivers and of the Rio Grande, Treaty Between the United States of America and Mexico, U.S.-Mex., Feb. 3, 1944, T.S. 994 [hereinafter Treaty].

28. Compact, *supra* note 24, at Arts. III(c)–(d); Treaty, *supra* note 27, at Art. 10.

29. See, e.g., BUREAU OF RECLAMATION, REVIEW OF THE COLORADO RIVER INTERIM GUIDELINES FOR LOWER BASIN SHORTAGES AND COORDINATED OPERATIONS FOR LAKE POWELL AND LAKE MEAD 15 (2020) (“The period of 2000 through 2019 was the lowest 20-year period in the historical natural flow record that dates back to 1906.”), https://www.usbr.gov/ColoradoRiverBasin/documents/7.D.Review_FinalReport_12-18-2020.pdf [hereinafter 7D REVIEW]; COLORADO RIVER RESEARCH GROUP, WHEN IS A DROUGHT NOT A DROUGHT? DROUGHT, ARIDIFICATION, AND THE “NEW NORMAL” 1 (2018), https://www.coloradoriverresearchgroup.org/uploads/4/2/3/6/42362959/crrg_aridity_report.pdf.

instruments—*e.g.*, the Colorado River Compact and U.S.-Mexico Treaty—and partly as shown by more recent collaborative efforts. The layers of institutions in the latter camp address adaptation vis-à-vis such timely subjects as biodiversity loss, ecosystem protection and restoration, tribal water rights, and transboundary water allocation in light of climate change. Collaboration appears recurrently as an essential tool for adaptation in these contexts. It should be elevated in negotiations over the new management framework and beyond. Such advocacy animates Part IV. Its focus is on institutional design—specifically, how to structure the negotiations in a collaborative fashion that not only adheres in the short term, but also sets a precedent for the long term. No progress of this sort can be made without a sense of the basin’s character—its layers of community—so that topic marks our put in.

II. LAYERS OF COMMUNITY

Western painter Patrick Kikut’s piece *Reservoir Powell: Crossing of the Cultures* kind of says it all. Created as part of the Sesquicentennial Colorado River Exploring Expedition—which retraced the historic 1869 Powell Expedition’s voyage down the Green and Colorado rivers during summer 2019—the piece depicts in sunlit orange, tan, brown, and salmon hues a spot of remarkable cultural intersection.³⁰ When the Dominguez-Escalante Expedition forded the Colorado River at this spot in 1776—later named the “Crossing of the Fathers”³¹—they were as exhausted as they were elated, “praising God our Lord and firing off some muskets in demonstration of the great joy we all felt in having overcome so great a problem.”³² The “main cause” of their suffering through “so much difficult terrain” was the absence of a Native guide from among the “great number of peoples” with whom they had interacted—“all of pleasing appearance, very engaging, and extremely timid,” and all speaking the “Yuta” language.³³ Two centuries later, as depicted in the foreground of Kikut’s painting, a reservoir submerged this crossing, bearing Powell’s name as a famed American explorer.³⁴ Prominent Native elements hover behind this “lake” in Kikut’s piece, one in the ancient form of *Naatsis’áán* (Navajo Mountain), the other in the industrial form of the now-shuttered Navajo Generating Station.

30. *The Expedition*, SCREE, <https://www.powell150.org/expedition> (last visited April 24, 2021).

31. Glen Canyon National Recreation Area, *Crossing of the Fathers (lost site)*, Utah, NATIONAL PARK SERVICE, https://www.nps.gov/parkhistory/online_books/explorers/sitea28.htm (last visited April 24, 2021).

32. THE DOMÍNGUEZ-ESCALANTE JOURNAL: THEIR EXPEDITION THROUGH COLORADO, UTAH, ARIZONA, AND NEW MEXICO IN 1776 120 (Ted J. Warner ed., 1995).

33. *Id.* at 120, 122.

34. See generally VISION & PLACE, *supra* note 12 (examining from retrospective and prospective angles Powell’s historical ideas about water, public lands, and Native Americans in the Colorado River Basin and broader “Arid Region”).

That is our complex world in the twenty-first century—layers atop layers of culture, identity, and meaning fused together in a place called the Colorado River Basin. It is a place eluding description in so many ways, though “extreme” is certainly a fit—extremity of climate, hydrology, and topography, bundled with something wonderfully incapable of measurement: stunning beauty. Witness on the one hand the alpine peaks of Wyoming’s Wind River Range, the Green River’s headwaters, or those within and adjacent to Rocky Mountain National Park, the Colorado River’s origin. The snowfields of these majestic water towers—as well as those of the San Juans, Wasatch, and Uintas—are the Colorado River system.³⁵ Consider on the other hand their downstream incising of the Grand Canyon as snowmelt and the canyon’s desert heart stretching along the river channel in scorching form several months each year, counterpoised by high, pine-filled rims. And the river runs further still through low-desert country, flowing slowly, starkly across the Mojave and the Sonora, and eventually reaching the Gila’s mouth. Below that confluence once lied one of North America’s most extensive, lush wetlands, the Colorado River Delta, though only remnants of Aldo Leopold’s “green lagoons” still remain.³⁶

Imagine what stories these mountains, rivers, and deserts could tell if they could only speak. Or perhaps if we would only listen. Not just stories about the Colorado River Basin’s natural history writ large, but inevitably dramas involving one inordinately influential species within that history in recent millennia, particularly the past 175 years. *Homo sapiens*. The Law of the River was *not* written on a blank page when it originated in the early twentieth century. Colorado River governance may have been institutionalized in 1922 with the Colorado River Compact’s negotiation.³⁷ But the real, messy, often appalling, sometimes inspiring *human* relationships surrounding Colorado River governance trace back much further, in some cases to time immemorial. In short, Colorado River governance has a backstory. It seems to be seldom told, at least outside a narrow window of time—perhaps due to shame, perhaps because of ignorance, or perhaps stemming from the paramount premium placed on condensed information in our busy age. Regardless of cause, the backstory is worth the trip, even if brevity only allows a broad narrative. For only when the layers of community embedded within *Reservoir Powell* are peeled back can a holistic picture of Colorado River governance be painted.

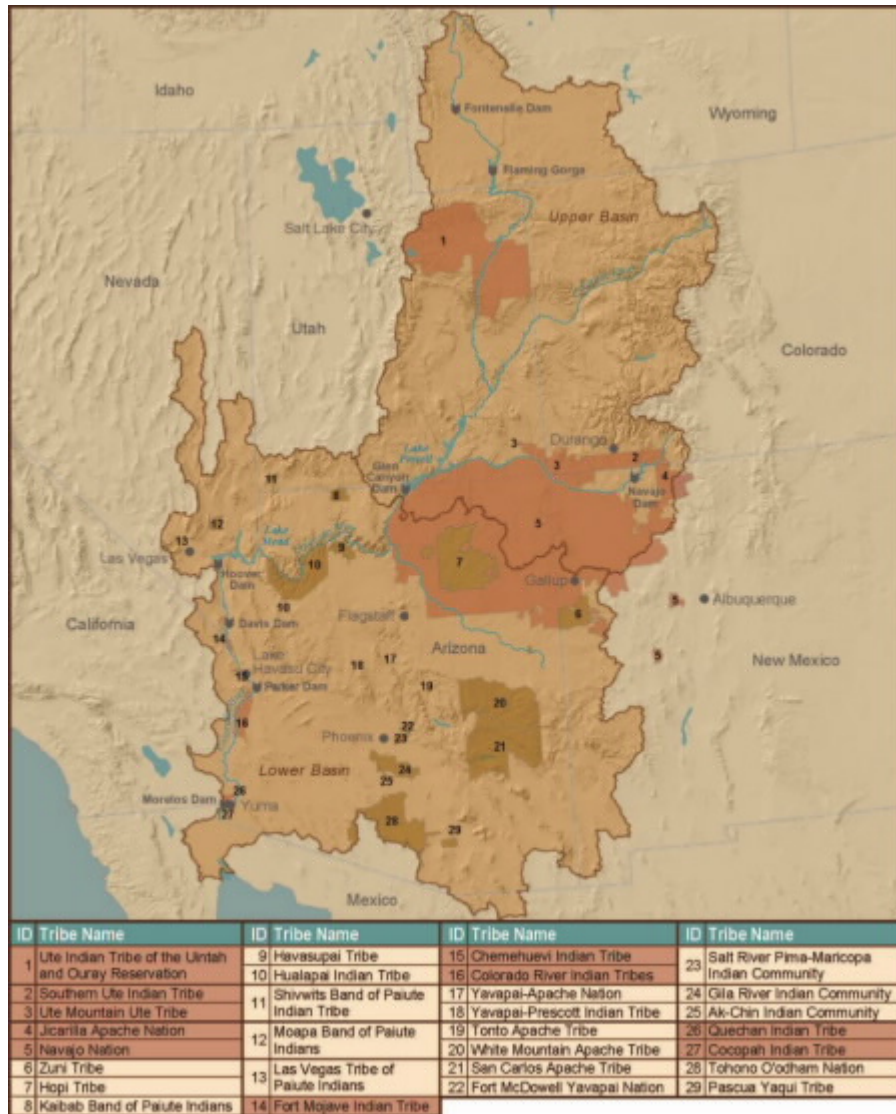
35. MOVING FORWARD REPORT, *supra* note 17, at 2 fig. 1.

36. ALDO LEOPOLD, A SAND COUNTY ALMANAC 150 (1949).

37. Compact, *supra* note 24.

Figure 1. Colorado River Basin³⁸

38. MOVING FORWARD REPORT, *supra* note 17, at 2 fig. 1.

Figure 2. Federally Recognized Tribes in Colorado River Basin³⁹

39. TRIBAL WATER STUDY, *supra* note 19, at app. 1B-1.

A. Natives

It only makes sense to start with the “first westerners”⁴⁰—a fitting term within and beyond the Colorado River Basin. The basin is rich in Native communities and has been so for further back than anyone can remember. No fewer than thirty federally recognized tribes reside on reservations inside the basin at this time, although these reservations generally pale in size compared to the tribes’ ancestral homelands—a pattern discussed further below.⁴¹

Precisely how long Native communities have been part of the basin depends upon whom you ask. Tribal members may answer forever or since time immemorial,⁴² both of which complement western science as a practical matter—for example, the more than 13,000 years during which humans are estimated to have inhabited the Grand Canyon region.⁴³ In light of this time span, Native communities in and around the basin predate human habitation of what is now England (encased in ice until 12,000 years ago), as well as ancient Chinese, Egyptian, and Phoenician civilizations.⁴⁴ Further indicia of this longstanding occupancy come from the Hopi village of Oraibi in what is now northeastern Arizona, as well as Acoma Pueblo in what is now west central New Mexico, both originating nearly a millennium ago and constituting some of the oldest continuously inhabited communities in North America.⁴⁵ These figures put into perspective the relative recency of the United States’ presence in the basin since the mid-nineteenth

40. CLYDE A. MILNER II, et al., *THE OXFORD HISTORY OF THE AMERICAN WEST* 10 (1994) [hereinafter *OXFORD HISTORY*].

41. For maps of Colorado River Basin tribes’ traditional homelands, see ANTON TREUER, *ATLAS OF INDIAN NATIONS* 170, 204 (2014). These maps should be cross-referenced with the “shrinking Indian territories” map sequence in *id.* at 18–19 and the reservations map in *TRIBAL WATER STUDY*, *supra* note 19, at app. 1B-1.

42. As described by Diné (Navajo) tribal member Sarana Riggs, who is the Grand Canyon Program manager at the Grand Canyon Trust: “It’s not the Grand Canyon to us, it is home. Our stories place us in the canyon since time immemorial . . .” *Native Voices Lead into Second Century of Grand Canyon National Park*, GRAND CANYON TRUST, (Feb. 26, 2020), <https://www.grandcanyontrust.org/native-voices-lead-second-century-grand-canyon-national-park>.

43. *Associated Tribes*, NAT’L PARK SERVICE, <https://www.nps.gov/grca/learn/historyculture/associated-tribes.htm> (last visited April 24, 2021).

44. TREUER, *supra* note 41, at 9.

45. *Indigenous Voices of the Colorado Plateau*, N. ARIZ. UNIV. LIBRARY: HOPI PLACES, https://library.nau.edu/speccoll/exhibits/indigenous_voices/hopi/places.html#place2 (“The village of Old Oraibi, established in 1100 A.D., is considered the oldest continuously inhabited settlement in North America.”) (last visited April 24, 2021); *The Story of Acoma*, SKY CITY CULTURAL CENTER & HAAK’U MUSEUM, https://www.acomaskycity.org/page/our_story (“Since 1150 A.D., Acoma Pueblo has earned the reputation as the oldest continuously inhabited community in North America.”) (last visited April 24, 2021).

century, as well as the Spanish/Mexican presence beginning in the mid-sixteenth century.⁴⁶

Although just referred to by the general term “Native communities,” that phrasing is poor insofar as it conveys the idea of a “single, monolithic population.”⁴⁷ Nothing could be further off the mark, both in the past and the present. In relation to the Colorado River Basin and more broadly, “many different cultures—varying in size, ambition, and economy—inhabited North America.”⁴⁸ “The cultural and linguistic diversity of the indigenous peoples of North America dwarfs that of Europe and many other places.”⁴⁹ As just one example, when Spaniards initially ventured into present-day New Mexico and Arizona, they identified fourteen different Native languages, pinning names that have since persisted: “Piro, Tiwa, Tewa, Keres, Jemez, Zuni, Moqui, Navajo, Apache, Maricopa, Yuma, Mohave, Yavapai, and Walapai.”⁵⁰

Yet these diverse communities did and do share one piece of unmistakable common ground. “The land made the first people of North America.”⁵¹ Words cannot do justice to Native connections to the land, but some effort must be made nonetheless. Several beautiful expressions come from the Hualapai people in the Grand Canyon region, who explain their origin as follows: “We were created from the reeds, sediment, and clay of the Colorado River at *Wi’Kahme* (‘sacred mountain of creation’),” which lies along the Lower Colorado River.⁵² The Hualapai thus revere *Ha’yidada* (the Colorado River) as a “life-giving source”⁵³ and “healing body of water.”⁵⁴ In their culture, “[t]he long expanse of the River through the [Grand

46. The United States assumed sovereignty over most of the land encompassed within the basin via the 1848 Treaty of Guadalupe Hidalgo, while the Coronado Expedition from 1540-1542 marks the onset of the Spanish/Mexican period. See *infra* Part II.B-C.

47. PETER IVERSON, *Native Peoples and Native Histories*, in OXFORD HISTORY, *supra* note 40, at 15.

48. *Id.*

49. TREUER, *supra* note 41, at 9. “[T]he land shaped the people.” *Id.*

50. EDWARD H. SPICER, *CYCLES OF CONQUEST: THE IMPACT OF SPAIN, MEXICO, AND THE UNITED STATES ON THE INDIANS OF THE SOUTHWEST, 1533-1960* 12 (1962). More broadly, “North America was home to more than 500 distinct tribes, speaking more than 300 distinct languages from 29 different primary language families The linguistic diversity of North American tribes is astounding. By contrast, European languages have three major classifications, broken into several families.” TREUER, *supra* note 41, at 7. Maps of Native language families within and adjacent to the Colorado River Basin can be found in *id.* at 14.

51. TREUER, *supra* note 41, at 9.

52. This quote is drawn from the Museum of Northern Arizona’s exceptional permanent exhibition “Native Peoples of the Colorado Plateau.” It displays the stories of ten tribes of the Colorado Plateau and contains 350 objects selected by 42 tribal consultants. Portions of the exhibition can be accessed at *Native Peoples of the Colorado Plateau*, MUSEUM OF NORTHERN ARIZONA, <https://musnaz.org/native-peoples-gallery/> (last visited April 24, 2021) [Hereinafter materials from the exhibition, which one of the authors viewed in person, will be cited as “Native Peoples.”].

53. HUALAPAI DEPT. OF CULTURAL RESOURCES, ABOUT THE HUALAPAI NATION 6 (2010), <http://hualapai-nsn.gov/wp-content/uploads/2011/05/AboutHualapaiBooklet.pdf> [hereinafter HUALAPAI NATION].

54. *The Voices of Grand Canyon*, GRAND CANYON TRUST (Feb. 20, 2020), <https://www.grandcanyontrust.org/native-american-stories-grand-canyon>.

Canyon] and the riparian eco-systems makes a life-way connection that flows through the hearts of the Hualapai people.”⁵⁵ This connection, in turn, factors into their animistic view of other relations within nature.

The Hualapai people regard the canyon and the Colorado River as a living entity infused with conscious spirit. All of the physical elements here have powers of observation and awareness, including the air, land, water, plants, animals, and stars. Everything in the landscape has a spirit deserving of respect.⁵⁶

So many similar examples of Native connections to the land exist. The Grand Canyon region is especially rich and powerful in this way.⁵⁷ Around that epic chasm and elsewhere, Native peoples have created names for the Colorado River and other landscape features, ascribing meaning (including sacredness) and deriving identity through the inherently connective enterprise of human language.⁵⁸ Perhaps even more to the point, the Colorado River system is the very place of origin for several Native communities. It is *the* spot from which they emerged into this world and from which they migrated for long periods to eventually arrive at their homelands. Witness the Hopi and Zuni in both respects.⁵⁹ Further, not only are the river system’s corridors places of emergence and migration for Native peoples, they are also places to which tribal members will return when they pass on.⁶⁰ Thus, the prevailing sense of stewardship for the land accompanying these connections is as powerful as it is unsurprising. As expressed by one Hopi tribal member: “We’re still here. We’re still in active communities. We still care deeply for the lands and this landscape. We still use it and are stewards.”⁶¹

Additional commonalities tied and tie Native communities together. One concerns the land, but in a different way than above—in regards to “ownership.” Although territoriality did exist among Native communities, the idea of individual land ownership did not.⁶² “Individuals did not own parcels of real estate, so status and power had nothing to do with the acquisition of acreage, as it did in Europe.”⁶³

55. HUALAPAI NATION, *supra* note 53, at 6.

56. This description of the canyon and river appears in an exhibit at the Eagle Point area of Grand Canyon West on the Hualapai Reservation [hereinafter Eagle Point].

57. For a survey of tribal connections to the Grand Canyon, see Jason Anthony Robison, *Indigenizing Grand Canyon*, 2021 UTAH L. REV. 101, 105–20 (2021).

58. Examples of Native terms for the “Colorado River” include *Hagtaya* (Havasupai), *Ha ’yidada* (Hualapai), *Pisisvayu* (Hopi), and *Paxa’* (Southern Paiute). Native Peoples, *supra* note 52.

59. See, e.g., Robison, *supra* note 57, at 114–19.

60. See, e.g., *id.* at 115–16 and 118.

61. This statement comes from Hopi tribal member Georgie Pongyesva. Sarana Riggs, *We’re Still Here: Native Voices on the Grand Canyon National Park Centennial*, ADVOCATE, 2018, <https://www.grandcanyontrust.org/advocatemag/fall-winter-2018/native-voices-grand-canyon>.

62. IVERSON, *supra* note 47, at 15.

63. *Id.*

Nor was collective land ownership a thing.⁶⁴ This relationship to the land—particularly the absence of individual ownership—overlaps with an intertwined commonality: “dedication to community.”⁶⁵ Permanency was an aspect of this dedication. “In general, each person stayed in his or her community of origin from birth to death, never leaving it for the next village, the next tribe, or the next hemisphere.”⁶⁶ So, too, did cooperation play a role, given its necessity for sustenance and survival.⁶⁷ In a similar vein, Native communities’ autonomy and localism are notable. Nothing akin to an all-encompassing state organization existed in and around the basin prior to contact by European peoples. “Widely extended political organization and conquest were unknown institutions. It was a region of small, autonomous, local communities, economically and politically independent of one another.”⁶⁸ These communities likewise possessed and continue to possess a final common trait. And it may be most important: “[D]ifferent peoples *learned* from each other.”⁶⁹ As they moved about, Native communities “transported old ways of doing things to new places and at the same time picked up improved methods of building houses, growing crops, hunting animals, or weaving rugs.”⁷⁰ Such exchange and adaptability would prove vital.

B. Spaniards & Mexicans

Arrival of the Spaniards in what is now the U.S. Southwest “inaugurated a new era” in the region’s history, including within and adjacent to the Colorado River Basin.⁷¹ Put in more loaded terms, “[t]he transformation of the continent’s Spanish-Mexican rim began in the first half of the 1500s, when Iberians introduced Native Americans to the predatory ways of Europeans.”⁷² Those ways included the Spaniards’ faith that “god had given them ‘dominion’ over all creatures of the earth, including the newly discovered infidels,” state institutions for enforcing social order (armies, police, and bureaucracies), and other conventions.⁷³ Hispanics expanded their presence across the region over the next three centuries, transforming “the indigenous landscapes and peoples.”⁷⁴ This process initially occurred under Spanish

64. See, e.g., *id.* (“Nor did groups as a whole own land.”).

65. *Id.*

66. *Id.*

67. IVERSON, *supra* note 47, at 15.

68. SPICER, *supra* note 50, at 9.

69. IVERSON, *supra* note 47, at 16 (emphasis added).

70. *Id.*

71. IVERSON, *supra* note 47, at 17.

72. DAVID J. WEBER, *The Spanish-Mexican Rim*, in OXFORD HISTORY, *supra* note 40, at 47.

73. *Id.* at 47–48.

74. *Id.* at 47.

rule from 1540 to 1821, and briefly continued under Mexican rule between 1821 and 1848.⁷⁵

February 23, 1540 marks the era's onset. A formidable army marched northward from Compostela in New Spain on that date to conquer the fabled Seven Cities of Cibola.⁷⁶ Imagine the impression made by the Coronado Expedition as it ventured into the heart of today's Southwest—a party of “three hundred Spanish adventurers (at least three of them women), six Franciscans, more than one thousand Indian ‘allies,’ and some fifteen hundred horses and pack animals.”⁷⁷ As conveyed by this image, “Coronado not only explored the Southwest,” he “sought to conquer the people who lived there.”⁷⁸ His expedition was one of several undertaken by Spaniards in the sixteenth and early seventeenth centuries aimed at these goals.⁷⁹

Yet a number of “firsts” distinguish the Coronado Expedition. Its maritime arm, led by Hernando de Alarcón, was the first group of Europeans to see the Colorado River, embarking from the delta on August 26, 1540, and persuading with “European trifles” Native peoples to drag the boats upstream from the banks.⁸⁰ Melchior Diaz likewise ascribed a European name to the river around this time, in September 1540, calling it the Rio del Tizon (Firebrand River) based upon a practice of Native peoples in the delta burning sticks for warmth.⁸¹ Diaz relied on these people to complete the first crossing of the river by Europeans.⁸² García López de Cárdenas also warrants attention in this vein. Accompanied by Hopi guides on an eighty-day journey beginning in August 1540, he was the first European to visit the Grand Canyon, viewing the Colorado River from its rim.⁸³ The canyon “baffled [Cárdenas's] most agile companions in their efforts to descend to the water or to discover some means of crossing to the opposite side. He returned with only the story of this hopeless barrier to exploration westward.”⁸⁴ Finally, and most importantly, there's what transpired when Coronado ultimately reached the first

75. The period of Spanish rule is discussed *infra* notes 75–133 and accompanying text, while the period of Mexican rule is discussed *infra* notes 134–147 and accompanying text.

76. GEORGE PARKER WINSHIP, *THE CORONADO EXPEDITION, 1540-1542* 382 (1896), <http://www.gutenberg.org/files/50448/50448-h/50448-h.htm>.

77. WEBER, *supra* note 72, at 49.

78. IVERSON, *supra* note 47, at 17.

79. For a map of these expeditions, see WEBER, *supra* note 72, at 46. The Coronado Expedition was prompted by the wanderings of Alvar Núñez Cabeza de Vaca from 1528 to 1536 and a reconnaissance of the lands north of Mexico by Marcos de Niza from 1538 to 1539. *Id.* at 46, 48–49. See also WINSHIP, *supra* note 76, at 345 (“[T]he information which led to the expedition of Friar Marcos de Niza and to that of Francisco Vazquez Coronado was brought to New Spain late in the spring of 1536 by Alvar Nuñez Cabeza de Vaca.”).

80. WINSHIP, *supra* note 76, at 404.

81. *Id.* at 406–407.

82. *Id.* at 407.

83. *Id.* at 390, 489.

84. *Id.* at 390.

purported “city of Cibola”—in actuality, the Zuni Pueblo of *Hawikuh*.⁸⁵ He staged a military assault and conquered the community.⁸⁶ In this way, “the mystery of the Seven Cities was revealed at last. The Spanish conquerors had reached their goal. July 7, 1540, white men for the first time entered one of the communal villages of stone and mud, inhabited by the Zuñi Indians of New Mexico.”⁸⁷ Coronado proceeded to exhort Zuni inhabitants of *Hawikuh* who returned after the assault—bringing gifts during Coronado’s recovery—“to become Christians and to submit themselves to the sovereign over-lordship of His Majesty the Spanish King.”⁸⁸

What happened at *Hawikuh* is, of course, a lone chapter in weighty tomes of Spanish exploration and colonization. The former—Coronado’s Expedition and otherwise—laid the groundwork for the latter. “The earliest Spanish expeditions set powerful forces into motion, altering native populations and institutions.”⁸⁹ That holds true with respect to lethal European infectious diseases, particularly smallpox and measles, accompanying the expeditions. It also speaks to a “legacy of ill-will” bestowed by them: “[t]he violent aggression of the earliest Spanish explorers affected Spanish-Indian relations for generations thereafter.”⁹⁰

In the domain of colonization, Coronado’s counterpart was Juan de Oñate. In 1598, he travelled north from Santa Barbara in New Spain to establish the first permanent European colony in what is now the American West: New Mexico.⁹¹ Oñate selected as his headquarters the Tewa-speaking Pueblo of *Ohke*, just north of present-day Santa Fe, declaring it a Spanish town, renaming it for San Juan, forcing the king’s new vassals out of their dwellings, yet still keeping them close at hand to extract labor, food, and clothing.⁹² Why did *Ohke*’s inhabitants accede to Oñate’s oppression? Probably “to avoid the deaths and damage” inflicted by Coronado and later explorers when prior Native communities had “failed to offer hospitality to Spaniards.”⁹³ Oñate perpetuated this cycle of violence at Acoma Pueblo less than a year later.⁹⁴ From 1604 to 1605, in turn, Oñate travelled across the Colorado River Basin, entering it in present-day northwestern New Mexico and trekking to the Gulf of California.⁹⁵ Yet nothing yielded from this exploration or other exploits persuaded Oñate to stay the course as it were. Having “found no wealthy Indians or mines, much less a transcontinental strait,” Oñate and the colonists prepared to abandon New Mexico.⁹⁶ Because of the wide range of Pueblo

85. WINSHIP, *supra* note 76, at 390.

86. *Id.* at 389.

87. *Id.* at 389.

88. *Id.* at 389–90.

89. WEBER, *supra* note 72, at 50.

90. *Id.*

91. *Id.* at 46, 51.

92. *Id.* at 51.

93. *Id.*

94. *Id.* at 51–52.

95. *Id.* at 46, 52.

96. *Id.* at 52.

Indians who had been baptized, however, the Spanish king granted the project a royal reprieve and permitted Franciscans to stay.⁹⁷ New Mexico thus “endured largely as a missionary outpost” throughout the seventeenth century, with a modest population of no more than 3,000 Spaniards supporting a single municipality, Santa Fe, founded between 1607 and 1610.⁹⁸

These snapshots of the Coronado Expedition and Oñate’s colonization of New Mexico are just that—granular stories within a massive Spanish metanarrative. The whole enterprise revolved around a paramount, time-tested rationalization: “civilization.”

[B]eginning in the late 1500’s, the Spaniards identified their attempts to change the Indians of this region as a mission for civilizing a savage people. The missionaries, the military captains, and the colonial administrators were very conscious of this mission and of themselves as bearers of civilization. Again and again they used the word “civilization” and instituted changes in everything from clothing to religious practice in its name.⁹⁹

The roots of this civilizing program trace to medieval Europe and the constructed hierarchy between “civilized” versus “barbarian” peoples.¹⁰⁰ This intellectual and moral convenience was a proverbial seed transplanted into New Spain’s soil. From it grew the civilizing program, “rest[ing] on the idea that the Spaniards enjoyed a way of life which was of a completely different quality from, and of course immeasurably superior to, that of the barbarians,” including Native communities in and around the Colorado River Basin.¹⁰¹ Spaniards bore a perceived obligation to “civilize” these “barbarians,” and fulfillment of this obligation was spun into a form of gift giving.¹⁰² “Lacking government, religion, and civilized decencies, the Indians were being given the opportunity to know these things and should be grateful for them.”¹⁰³

Native communities were culturally inferior, Spanish communities were culturally superior. That was the dogma of “civilization” in the context of Spanish missions and towns.¹⁰⁴ Cultural relativism had no place. Rather, “[t]he Spanish program was an a priori, unilaterally conceived plan for improving, that is, civilizing, the barbarian Indians” of the Colorado River Basin and overall region.¹⁰⁵ And the perceived “improvements” spanned many facets of life:

97. *Id.*

98. *Id.*

99. SPICER, *supra* note 50, at 5.

100. *Id.* at 281.

101. *Id.*

102. *Id.* at 281–82.

103. *Id.* at 282.

104. *Id.* at 285.

105. *Id.*

The Spaniards identified civilization with specific elements of the Spanish culture of the period. They identified it by and large with the Castilian variety of the Spanish language, with adobe and stone houses, with men's trousers, with political organization focused through loyalty and obedience to the King of Spain, and with the Roman Catholic form of Christianity. For more than two hundred years after 1540 the Spaniards in northwestern New Spain sought by various means to replace corresponding features of Indian cultures with these and other elements¹⁰⁶

These collective elements have been dubbed a "Culture of the Conquest" because of their unified focus on conquest via the civilizing program.¹⁰⁷ No doubt this terminology carries heavy connotations. They were borne out in many ways, however, including a tried and true Spanish technique for conforming Native communities to the elements: "forcible imposition."¹⁰⁸ Military coercion and corporeal punishment were widely harnessed:

We may say that the Spaniards employed force to get the Indians to live according to their legal and political system, to make them work regularly in their economic enterprises, to persuade them to follow the weekly plan of worship in the churches, and to give up aspects of their religion classed by the missionaries as idolatry or worship of the Devil.¹⁰⁹

As outlined in these broad strokes, the Spanish civilizing program remained consistent in form throughout the colonization era, from the early 1600s to the early 1800s.¹¹⁰

A relationship cycle commonly followed Spanish attempts to impose the civilizing program on Native communities within and adjacent to the Colorado River Basin. The cycle played out in various ways across the region but generally entailed four stages: (1) initial acceptance of the civilizing program by the Native community; (2) growing tension between the Natives and Spaniards; (3) rebellion or attempted rebellion by the Native community; and (4) mutual accommodation between the

106. *Id.* at 5. These elements are reiterated and supplemented slightly in *id.* at 282. See also WEBER, *supra* note 72, at 53–54 ("Many Spanish priests . . . could not imagine that a people could become Christians unless they lived like Europeans. Thus, in the ideal mission, Franciscans sought to reshape the natives' temporal lives by teaching them to dress, eat, and live like town-dwelling Spaniards.").

107. SPICER, *supra* note 50, at 284.

108. *Id.* at 324.

109. *Id.* at 326. See also WEBER, *supra* note 72, at 54 ("[O]nce natives consented to receive baptism, Franciscans commonly relied on military force to prevent converts from slipping back into apostasy . . .").

110. SPICER, *supra* note 50, at 331.

Natives and Spaniards.¹¹¹ These stages can be seen in seventeenth-century New Mexico, as well as throughout the “eighteenth century as Spanish missionaries attempted conversions among other sedentary peoples in far northern New Spain,” including the Pimas of present-day southern Arizona and coastal tribes of Alta California.¹¹²

Native communities weren’t passive subjects of the civilizing program. Far from it. There are numerous examples of the rebellion stage of the relationship cycle. Most well-known is the Pueblo Revolt of 1680. The Pueblos’ population in New Mexico had fallen by at least half—to roughly 17,000—between Oñate’s initial colonization in 1598 and the revolt.¹¹³ Rejecting the forcible imposition of Catholicism and Spanish rule, it was a coordinated resistance by an alliance of New Mexico’s forty-six Pueblos, plus Hopi and Zuni peoples.¹¹⁴ Within a three-day period, the Native alliance “put Santa Fe under siege and destroyed every other Spanish settlement in the region,” killing 500 Spaniards and chasing the remaining 2,000 to Mexico.¹¹⁵ Spanish reconquest of New Mexico began twelve years later, but it precipitated further Native resistance, spurring another revolt in 1696 involving all but five of the Pueblos.¹¹⁶ The Hopi subsequently destroyed Awatovi, the one Hopi village that had tried to adopt Christianity, in 1700, and followed suit in 1706 with an attack on “the nearest Pueblo village of Zuni to protest the return of Christian influence there.”¹¹⁷ All told, the Hopi “expelled the Franciscans in the 1680 revolt and maintained their independence until the end of the Spanish era.”¹¹⁸ Further examples of Native resistance included the Pima Revolt of 1751—“a widespread nativistic reaction to Spanish intrusion” into Pimeria Alta (now southern Arizona)—as well as the Yuma Revolt of 1781 wherein the Quechans closed the Spaniards’ only land connection between Pimeria Alta and Alta California, the critical Colorado River crossing at Yuma.¹¹⁹ While Spaniards characterized these acts of resistance as “rebellions,” Native communities assuredly saw them through different eyes—“as armed struggles for freedom.”¹²⁰

Yet Native communities also weren’t passive subjects of Spanish influence in a different sense. Not only did these communities learn from one another before the Spanish invasion—as noted above—“their flexibility carried over into the

111. WEBER, *supra* note 72, at 57.

112. *Id.*

113. *Id.* at 55.

114. TREUER, *supra* note 41, at 176; *see also* RICHARD WHITE, “IT’S YOUR MISFORTUNE AND NONE OF MY OWN”: A NEW HISTORY OF THE AMERICAN WEST 12 (1991). White also notes the Pueblos’ “cooperation with some of the surrounding ‘Apaches’ (either Navajos or actual Apaches) . . .” *Id.* at 12.

115. TREUER, *supra* note 41, at 176.

116. WHITE, *supra* note 114, at 12.

117. IVERSON, *supra* note 47, at 18. The Hopi repelled Spanish military emissaries sent to chastise them for this “obstinacy” in 1701, 1707, and 1717. *Id.*

118. WEBER, *supra* note 72, at 57.

119. *Id.* at 67.

120. *Id.* at 55.

postcontact period.”¹²¹ The Navajo offer one illustration. During the 140 years between the Coronado Expedition and the Pueblo Revolt, they “learned about the Spaniards’ religion, language, and culture and gradually determined the usefulness of these things. Few Navajos saw any point in converting to Catholicism. . . . Nor did Spanish replace the Navajo language.”¹²² At the same time, the Spaniards’ horses, sheep, cattle, and goats melded into Navajo culture.¹²³ The Navajo were not outliers in this way. “Even the sedentary farmers at Zuni eventually took up ranching.”¹²⁴ So, too, did the Apache—who were never conquered by the Spanish—adopt horses and metal weapons, utilizing them for raiding and keeping large herds.¹²⁵ The Spanish likewise presented “certain opportunities” to the Pueblos of New Mexico, from livestock to the technical skills of new craftsmen to new crops such as peaches, wheat, oats, plums, and apricots.¹²⁶ Catholicism also seeped in. Although the Pueblos “did not abandon their own religious rituals,” the new religion came to supplement and to partially merge with pre-existing rites.¹²⁷

Native communities’ selective incorporation of Spanish culture dovetailed with another practical consideration: protection. Arguably even more so than cultural incorporation, protective alliances between Native communities and the Spanish make sense of the mutual-accommodation stage of the relationship cycle. In New Mexico, Spanish power was not only relevant to interpueblo relations, “a potentially valuable addition to an individual pueblo” in its relations with rival Pueblos.¹²⁸ The Spanish also “offered the Pueblos protection against all the less settled peoples . . . who lived in the surrounding lands”—and vice versa as far as what the Pueblos could muster against common enemies.¹²⁹ Thus, moving forward from the Spaniards’ quelling of the 1696 revolt, “came stability of a sort.”¹³⁰ Mutual protection was a key factor in forging this accommodation. “The Spanish and the Pueblos came to need each other, for surrounding them were other Indians who increasingly preyed upon Spaniard and Pueblo alike and were preyed upon in turn.”¹³¹ The Spanish called these tribes *bárbaros*, and they included the Comanches, Faraone Apaches, and initially the Navajos.¹³² “Against these *bárbaros* the Spaniards, the Pueblos, and usually the Utes stood together,” constituting “the

121. IVERSON, *supra* note 47, at 16.

122. *Id.* at 38.

123. *Id.*

124. TREUER, *supra* note 41, at 167.

125. *Id.*; see also WHITE, *supra* note 114, at 10 (“[M]ounted and armed with metal weapons, the Apache, Navajo, and Ute raiders became far more dangerous opponents than they had ever been before the Spanish arrived.”).

126. TREUER, *supra* note 41; see also WHITE, *supra* note 114.

127. WHITE, *supra* note 114, at 11.

128. *Id.* at 10.

129. *Id.*

130. *Id.* at 12.

131. *Id.* at 13.

132. *Id.*

most successful Indian alliance the Spanish would forge in their northern provinces.”¹³³

When Mexico gained independence from Spain in 1821, human relationships in and around the Colorado River Basin changed yet also stayed the same.¹³⁴ During their quarter century of rule, Mexicans followed in their predecessors’ footsteps by self-identifying as “bearers of civilization.”¹³⁵ In this way, they perpetuated ancient Europe’s constructed hierarchy between “barbarian” and “civilized” peoples.¹³⁶ Mexicans “were just as certain as the Spaniards that their own kind of culture was civilization and that they had a mission to civilize the Indians.”¹³⁷ The content of the civilizing program showed some continuity as well. Mexicans “still regarded Castilian Spanish . . . as an important element, and they still emphasized rectangular houses of some sort and men’s trousers.”¹³⁸ Where things changed a bit was with other elements of the civilizing program—namely, (1) granting of full citizenship to Native peoples, (2) political incorporation of all citizens (Native peoples included) into the nation-state, and (3) equitable distribution of land in individual parcels adequate to support families.¹³⁹ These new measures aimed to move Mexico—with Native communities assimilated into it—away from “the system of bad government and economic stagnation which had characterized the final phase of Spanish rule.”¹⁴⁰ Unintended consequences nonetheless followed.

A familiar pattern of Native resistance and Mexican forcible imposition ensued. Native communities received the civilizing program in its Mexican mold “as a new form of oppression and a threat to a well-established way of life.”¹⁴¹ Resistance varied across communities, on the one hand prompting flight from the new measures, on the other hand armed revolt.¹⁴² But Mexican officials doubled down.¹⁴³ Rather than modifying the civilizing program’s new measures, they strove to force their acceptance.¹⁴⁴ “[W]henver the Indian reaction took the form of determined resistance, the Mexican policy became one of simple force”—that is, “forcible ‘civilizing’ of the Indians”—including wholesale killing of Native peoples, destruction of their crops, “nondestructive military colonization” of their

133. *Id.*

134. For a map depicting the Spanish presence in the region as of 1821, see WEBER, *supra* note 72, at 69. See also *id.* at 67 (discussing Spanish population figures in 1821 within California, Texas, Arizona, and New Mexico).

135. SPICER, *supra* note 50, at 5.

136. *Id.* at 281.

137. *Id.* at 5.

138. *Id.*

139. *Id.* at 334–35.

140. *Id.* at 335.

141. *Id.* at 336.

142. *Id.*

143. *Id.*

144. *Id.*

communities, and deportation.¹⁴⁵ It takes little effort to surmise what rationalization came into play here, perhaps above all else in relation to what was considered the “cornerstone of a solution of the Indian problems”: “[t]he concept of individual ownership of plots of land.”¹⁴⁶ “The view developed that the Indian tendencies toward tribal separatism and the corporate community were a species of *barbarism* which had to be destroyed if Mexico was to become a functioning nation.”¹⁴⁷ This rationalization would reveal the cyclical nature of time as the nineteenth century unfolded.

C. Americans

Choosing the proper entry point for U.S. colonization of the Colorado River Basin and broader West is more difficult than may appear at first blush. Given his role in the Louisiana Purchase and the Lewis and Clark Expedition, however, President Thomas Jefferson is certainly high up on the shortlist, particularly a continental vision articulated by him in 1801, roughly two years before the “imperial fire sale” with Napoleon.¹⁴⁸

However our present interests may restrain us within our own limits, it is impossible not to look forward to distant times, when our rapid multiplication will expand itself beyond those limits and cover the whole northern, if not the southern continent, with a people speaking the same language, governed in similar form by similar laws.¹⁴⁹

Two decades after this statement, in 1821, Mexico’s independence from Spain created a gap for Jefferson’s continental vision—at least the northern part of it—with Euro-Americans streaming into the present-day U.S. Southwest “for the first time in significant numbers as Mexico nullified Spanish restrictions against foreign residents and foreign commerce.”¹⁵⁰ “[T]he American era was about to begin,” and the stream “would soon turn into a flood.”¹⁵¹

There was a preset channel (channels, really) through which the flood would surge, though some of the new immigrants held themselves high above it, displaying “little curiosity about the Hispanics who had preceded them.”¹⁵² Rather, “blinded by anti-Spanish and anti-Mexican biases, many of the earliest Anglo Americans preferred to imagine the trans-Mississippi West as a virgin land and

145. *Id.* at 338–39.

146. *Id.* at 338.

147. *Id.* (emphasis added).

148. WHITE, *supra* note 114, at 61–62, 119–21.

149. ROXANNE DUNBAR-ORTIZ, AN INDIGENOUS PEOPLES’ HISTORY OF THE UNITED STATES 3 (2014).

150. WEBER, *supra* note 72, at 21.

151. IVERSON, *supra* note 47, at 41.

152. WEBER, *supra* note 72, at 47.

readily overlooked the region's long Hispanic past."¹⁵³ A rich, ironic sense of cultural supremacy and cultural inferiority thus accompanied the new era.

Initially, Anglo Americans dismissed the long Spanish-Mexican tenure in the region as a time of despotism, religious intolerance, and economic stagnation and Hispanics themselves as indolent, vicious and superstitious (characteristics that Spaniards had often applied to Indians). Painting the Hispanic past in dark hues enabled Anglo Americans to draw a sharp contrast with the enlightened institutions that they imagined they had imposed on the region.¹⁵⁴

Central to the preset channel—despite the new immigrants' ethnocentrism—was a continued, albeit reoriented focus on "civilization" and ultimately conquest. Conceptions of "civilization" differed partly, though not fully, as between the new immigrants and the Spanish and Mexican colonists.¹⁵⁵ Yet the "civilizing" program's end goal for Native communities in and around the Colorado River Basin reverberated.¹⁵⁶ As the program played out between 1848 and 1922—the former reflecting the Treaty of Guadalupe Hidalgo's formation, the latter marking the Colorado River Compact's drafting—the new immigrants crafted novel laws and policies governing their relationships with the region's lands and waters.¹⁵⁷ These developments reflected the same heavy truth as the "civilizing" program. "The Anglo American migrants had come as conquerors."¹⁵⁸ "They had envisioned a West with little or no room for the life that had been previously lived there," and they "felt free to impose their own language, government, economic organization, law, and customs to their adopted land."¹⁵⁹

To be clear, although the 1848 Treaty of Guadalupe Hidalgo formally heralds the United States' assumption of sovereignty over most of the Colorado River Basin's land mass, a good deal of groundwork had been undertaken prior to the treaty.

Some groundwork had taken place on the physical landscape. Consider the expeditions adjacent to and across the basin by Zebulon Pike (1806-1807), Stephen Long (1819-1820), and Benjamin Bonneville (1832-1836), as well as wide-ranging

153. *Id.*

154. *Id.* at 73.

155. The distinct features yet familiar end goal of the American "civilizing" program between 1848 and 1922 are discussed *infra* notes 177–222 and accompanying text.

156. *Id.*

157. The doctrinal features and underlying environmental ethics of these novel laws and policies are surveyed *infra* notes 222–241 and accompanying text.

158. WHITE, *supra* note 114, at 181.

159. *Id.*

travels of mountain men such as Jim Bridger, William Ashley, and Jedediah Smith.¹⁶⁰ The U.S. Army Corps of Topographical Engineers likewise came into existence during this period, in 1838, encompassing within its work John C. Fremont's extensive explorations in and around the basin during the 1840s.¹⁶¹ A clear goal drove government explorers and scientists in the field at this time:

They sought to establish American hegemony and dominance in the West, to give reliable descriptions of Indian cultures, to assess resources with scientific exactness, and generally to record an account of the West that would enable Anglo American settlers to make it the site of a complex industrial civilization.¹⁶²

Other groundwork had fallen in the domain of politics and public consciousness. It involved the creation and dissemination of a durable construct—one harkening back to Thomas Jefferson's continental vision and similar expansionist sentiments by Benjamin Franklin, John Adams, and James Monroe.¹⁶³ The construct was "manifest destiny."¹⁶⁴ Coined by newspaper editor John L. O'Sullivan in 1845, the phrase surfaced during debates over Texas's annexation into the United States.¹⁶⁵ In O'Sullivan's rhetoric, foreign interference in that annexation threatened to thwart "the fulfillment of our manifest destiny to overspread the continent allotted [*sic*] by Providence for the free development of our yearly multiplying millions."¹⁶⁶ Thus, "before the claims of Providence, legal claims of other nations, let alone the unmentioned claims of Indians" were mere "cobweb tissues" in O'Sullivan's view.¹⁶⁷ Although the aggressive tone and nationalistic zeal of "manifest destiny" did *not* reflect a consensus across U.S. society at this time, the construct's expansionist nature found expression in the Mexican-American War from 1846 to 1848—a "war of conquest" provoked by U.S. federal officials.¹⁶⁸

Through this act of imperialism the Colorado River Basin was annexed into the United States, and the stage was set for the nation's western borders to coalesce. The Treaty of Guadalupe Hidalgo was the main legal instrument. "For 15 million

160. *Id.* at 47–48, 121–22. Trading posts opened by American traders during this period "extended as far west as the Gunnison River in Colorado and the Uintah River in Utah, where Antoine Robidoux, a French-American who had obtained Mexican citizenship, opened posts among the Utes." *Id.* at 52. See also MILNER, *supra* note 40, at 159, 162–63.

161. WHITE, *supra* note 114, at 122–25.

162. *Id.* at 122.

163. MILNER, *supra* note 40, at 166.

164. *Id.*

165. *Id.*

166. *Id.* As further professed by O'Sullivan: "The American claim is by the right of our manifest destiny to overspread and to possess the whole of the continent which Providence has given us for the development of the great experiment of liberty and federative self-government entrusted to us." WHITE, *supra* note 114, at 73.

167. WHITE, *supra* note 114, at 73.

168. *Id.* at 79–81; MILNER, *supra* note 40, at 166.

dollars and the assumption of all claims by American citizens against Mexico," the United States assumed sovereignty over a vast portion of the West that included parts of present-day Texas, New Mexico, Colorado, Arizona, Utah, Nevada, and California.¹⁶⁹ A few years later, in 1853, the Gadsden Purchase went through, incorporating into the United States a 29,000 square-mile strip across what are now southern Arizona and southwestern New Mexico.¹⁷⁰ "With the Gadsden Purchase the boundaries of the modern American West were complete."¹⁷¹ These borders did not realize manifest destiny's full ambition. Nor did they contemplate equality for all peoples within them:

The federal government willingly acquired new land, but it did not willingly embrace the people inhabiting that land. . . . As for the people within the Mexican cession to the United States, they were left on the margins of American society. A clear sense of racial hierarchy, based on the assumption of white cultural superiority, often led to legal, political, and social exclusion for racial minorities.¹⁷²

Dovetailing with their aggregation of land, the Treaty of Guadalupe Hidalgo and the Gadsden Purchase transplanted something foundational from the legal realm into the Colorado River Basin and its environs: the U.S. Constitution. It put into place a framework of legal relations that has fundamentally shaped human habitation in and around the basin since the mid-nineteenth century. This habitation consists not only of human relations—for example, those between the new Euro-American immigrants' communities, pre-existing Spanish and Mexican communities, and longstanding Native communities—but also relations between human beings and other parts of nature (human-nature relations)—for example, those between human beings and the Colorado River itself. The Property Clause,¹⁷³ Treaty Clause,¹⁷⁴ Indian Commerce Clause,¹⁷⁵ Compact Clause,¹⁷⁶ and other provisions set legal parameters around which later subconstitutional laws (treaties, statutes, executive orders, regulations, etc.) would be composed and according to which human habitation in the region would be molded.

169. WHITE, *supra* note 114, at 83.

170. *Id.*

171. *Id.*

172. MILNER, *supra* note 40, at 168. *See also id.* at 157 ("Acquisition was simply a claim to western lands that were already occupied by an incredible variety of native peoples, a distinct population of Hispanic settlers, and a diverse representation of fur trappers.").

173. "Congress shall have Power to dispose of and make all needful Rules and Regulations respecting the Territory or other Property belonging to the United States." U.S. CONST. art. IV, § 3.

174. "The President . . . shall have Power, by and with the Advice and Consent of the Senate, to make Treaties, provided two thirds of the Senators present concur." *Id.* at art. II, § 2.

175. "Congress shall have Power . . . To Regulate Commerce . . . with the Indian Tribes." *Id.* at art. I, § 8.

176. Phrased in an inverse manner, the Compact Clause provides: "No State shall, without the Consent of Congress, . . . enter into any Agreement or Compact with another State." *Id.* at art. I, § 10.

These constitutional provisions anchored the United States' program for "civilizing" Native communities within and beyond the Colorado River Basin. To appreciate the program's genesis and nature, however, the story must meander to earlier chapters of U.S. history.

During the decades leading up to the Treaty of Guadalupe Hidalgo, there hadn't been a "civilizing program" per se—at least not in the sense that emerged in and around the Colorado River Basin later in the nineteenth century. Rather, there had been an isolation policy whose roots traced to English colonization of North America. "Throughout the period preceding the formation of the United States, the British failed to conceive of an empire which should include the Indians as an integral part of its citizenship."¹⁷⁷ Instead, as English settlers pushed west from the Eastern Seaboard, "the result was the growth of a territory inhabited almost entirely by Europeans with few persisting Indian communities."¹⁷⁸ This practice of isolating Native American communities from English settlers set a precedent for the United States in 1776—namely, the vision of "a wholly non-Indian nation which might grow by pushing Indians westward where they would be free to live in whatever way they cared to, providing they remained peaceful with the Whites settled at the borders of their territory."¹⁷⁹ Put differently, early U.S. policy posited that "the solution to conflicts over land and way of life lay in isolating the Indians as completely as possible from the Whites and letting them go their own way."¹⁸⁰ By calling for removal and isolation rather than incorporation, the policy differed sharply from the Spanish and Mexican "civilizing" programs. It embodied a cold "truth" perceived by the new immigrants: "civilization" was "something peculiarly their own and not for the Indians."¹⁸¹

Yet O'Sullivan's "multiplying millions,"¹⁸² in the rhetoric of manifest destiny, forced the isolation policy to morph—though not break—following its arrival in and around the Colorado River Basin. Euro-American immigration into and across the basin accelerated rapidly after the Treaty of Guadalupe Hidalgo.¹⁸³ Pre-treaty government expeditions and fur trading had laid groundwork as described above,¹⁸⁴ with Jedediah Smith's "rediscovery" of Wyoming's South Pass through the Rocky Mountains being especially notable, as it spawned a proverbial settler "super-

177. SPICER, *supra* note 50, at 344.

178. *Id.*

179. *Id.* See also COHEN'S HANDBOOK OF FEDERAL INDIAN LAW 45–54 (2005) (discussing removal policy) [hereinafter COHEN'S].

180. SPICER, *supra* note 50, at 345.

181. *Id.* at 5. See also *id.* at 344 ("For the most part the Anglo approach was dominated by the idea of pushing the Indians out of their way and keeping them apart from themselves. In general, the settlers thought in terms of extermination or forcible isolation, rather than Christian conversion.").

182. MILNER, *supra* note 40, at 166.

183. WHITE, *supra* note 114, at 189.

184. *Id.* at 47–48, 121–25.

highway.”¹⁸⁵ Euro-American immigrants bound for the Oregon country would rely on South Pass, as would the Mormons in their initial journey and successive migrations to the Salt Lake Valley.¹⁸⁶ Upon their 1847 arrival in that valley, the Mormons petitioned Congress to establish the massive State of Deseret—a request that ultimately fell flat, but nonetheless marked the onset of an expansive colonization effort throughout the basin and beyond.¹⁸⁷ So, too, did droves of Forty-Niners traverse South Pass on their way to California’s glittering gold.¹⁸⁸ All told, from 1840 to 1860, approximately 300,000 immigrants traveled to the Far West on the overland trails: 200,000 to California (120,000 during the Gold Rush years), 53,000 to Oregon in search of farms, and 43,000 to Utah as a haven from religious persecution.¹⁸⁹

Immigration and settlement of this sort caused unprecedented incursions into tribal homelands in and around the Colorado River Basin¹⁹⁰—a pattern facilitated by the federal government with transformative results for the isolation policy. One example of this facilitation involved government expeditions cutting across different parts of the basin and its environs during the 1850s to select a transcontinental railroad route.¹⁹¹ That selection would not be made until after the Civil War, but the federal government responded to the immediate “need of western settlers for a transportation network” with wagon roads, constructing thirty-four of them in the West between 1850 and 1860.¹⁹² Further facilitation occurred over the next two decades with federal surveys of the basin and broader region by Clarence King, George Wheeler, Ferdinand Hayden, and John Wesley Powell.¹⁹³ These surveys would “reveal to settlers the conditions that they would encounter and the resources they could develop. Any such endeavor created a vision of the West.”¹⁹⁴ And the surveys overlapped with yet another facilitator: the U.S. military.¹⁹⁵ Indian wars spanned the latter half of the nineteenth century within

185. *Frontiersman Jedediah Smith is Born*, HISTORY, <https://www.history.com/this-day-in-history/mountain-man-jedediah-smith-is-born> (last updated Jan. 4, 2021).

186. See *Mormon Pioneer National Historic Trail*, NATIONAL PARK SERVICE, <https://www.nps.gov/mopi/planyourvisit/maps.htm> (last updated Jan. 28, 2021) (showing an interactive map of the Mormon Pioneer National Historic Trail).

187. MILNER, *supra* note 40, at 172; WHITE, *supra* note 114, at 163–66.

188. MILNER, *supra* note 40, at 189. Miners also traveled to the California gold fields via a southern route through the Colorado River Basin that included portions of present-day New Mexico, Arizona, and California. *Travelers on the California Leg of the Southern Route 1849-1852*, CALIFORNIA DEPT. OF PARKS AND RECREATION, https://www.parks.ca.gov/?page_id=24680 (last visited April 24, 2021).

189. WHITE, *supra* note 114, at 189.

190. *Id.* at 90. See also COHEN’S, *supra* note 179, at 64 (“Indian tribes were engulfed in the stream of western migration.”).

191. WHITE, *supra* note 114, at 125. See also MILNER, *supra* note 40, at 161.

192. WHITE, *supra* note 114, at 127.

193. *Id.* at 128–35. These surveys were consolidated into the U.S. Geological Survey in 1879. *Id.* at 132. A useful map of the surveys can be found in Milner, *supra* note 160, at 186.

194. WHITE, *supra* note 114, at 135.

195. MILNER, *supra* note 40, at 173–83.

the basin and across the West.¹⁹⁶ “[N]ot all Indian tribes fought American troops” during this period, “but all Indians came under the federal government’s policy of cultural assimilation” detailed below.¹⁹⁷ That was the context for the surveys. They were inseparable from the Indian wars, providing military officials with maps and wagon-road surveys, as well as facilitating Euro-American migration and settlement that inherently appropriated resources on which Native communities historically had depended.¹⁹⁸ So much for being left alone.

These factors brought into being a “civilizing” program implemented by the United States in and around the Colorado River Basin after the 1848 Treaty of Guadalupe Hidalgo. An outgrowth of the pre-existing isolation policy, the concept that “dominated Anglo thought about Indians” at this time was the reservation.¹⁹⁹ It reflected the reality that Euro-American immigrants were gradually overrunning tribal homelands.²⁰⁰ “No spot in the United States could any longer be thought of as a permanently isolated area.”²⁰¹ Thus, “[t]he reservation policy became a form of internal removal within the West.”²⁰² It was “an application of the peace-through-isolation program and consisted of forcing conquered Indians into those parts of their territory least desirable to White settlers and keeping them there through force.”²⁰³ When considered in the context of the Indian wars, General William T. Sherman’s harsh description of the reservation policy’s impact on Native communities tied a bow around things. The policy entailed “a double process of *peace* within their reservation and war *without*.”²⁰⁴

But not only did reservations serve an isolating function. They were conceived as “civilizing” tools with a limited shelf life. Putting Native communities onto the “white road”—in the Colorado River Basin and elsewhere—is ultimately what reservations aimed for.²⁰⁵ Devised to foster eventual cultural assimilation into mainstream U.S. society, reservations were constructed as places where “Indians were to be individualized and detribalized. . . . Indians would break their communal bonds, give up their tribal identity, and then as individuals enter white society.”²⁰⁶ Temporary segregation was the prescription and prognosis, with the acculturation process involving conversion to agriculture, Christianity, English, and private

196. *Id.*

197. *Id.* at 173.

198. *Id.* at 129–30.

199. SPICER, *supra* note 50, at 345.

200. COHEN’s, *supra* note 179, at 64.

201. SPICER, *supra* note 50, at 347.

202. MILNER, *supra* note 40, at 174.

203. SPICER, *supra* note 50, at 346.

204. MILNER, *supra* note 40, at 174.

205. *Id.*

206. WHITE, *supra* note 114, at 92. See also COHEN’s, *supra* note 179, at 65 (“The reservations were, in effect, envisioned as schools for civilization, in which Indians under the control of the agent would be groomed for assimilation.”).

property.²⁰⁷ Boarding schools were instrumental to this end—particularly in the U.S. Southwest—“isolating children from their tribe, forcing them to speak English, and compelling them to follow Anglo American customs.”²⁰⁸ The paramount goal—as infamously described by Indian “educator” Richard Henry Pratt—was to “kill the Indian and save the man.”²⁰⁹ And the U.S. military’s role again cannot be overlooked. It kept tribes isolated—forcibly bound to the “civilizing” process—on reservations.²¹⁰ While this policy is deeply troubling from a present-day perspective, General Sherman’s statement above throws into relief what was an even more dismal alternative at the time: outright extermination of Native peoples.²¹¹

Although reservations (or portions thereof) did prove temporary for some tribes, it wasn’t because they achieved their assimilationist goals. Quite the opposite. Rather, “[a]n important complement to the reservation policy was the device of allotment.”²¹² Recall the cornerstone of the Mexican “civilizing” program, “[t]he concept of individual ownership of plots of land,” as well as its underlying premise, “the basis of civilization consisted in knowing how to handle individual property.”²¹³ This measure came full circle. Allotment was similarly regarded as a “fundamental feature” of the U.S. “civilizing” program.²¹⁴ Premised on the belief that “private property and individual autonomy formed the heart of civilization,” allotment of communally held reservation lands into individual parcels reflected a prevailing view among federal officials: “As long as Indians held their land in common . . . the entire ‘civilizing’ process could not take place.”²¹⁵ Although allotment provisions had appeared in treaties and other instruments creating reservations earlier in the nineteenth century, the General Allotment Act of 1887 (Dawes Act) was the comprehensive piece of legislation that ushered in the allotment era.²¹⁶ Eastern reformers considered the policy vital to the “civilizing” program, while Western settlers and developers supported it to gain access to reservation lands, as unallotted lands were deemed “surplus” and opened for Euro-

207. See, e.g., MILNER, *supra* note 40, at 173 (“Through education and missionization, the government hoped to transform tribal peoples into independent Christian farmers.”).

208. WHITE, *supra* note 114, at 113. See also SPICER, *supra* note 50, at 348 (“It was believed . . . that the Indian societies with their barbaric influences could be broken apart more quickly if all the Indian children were required to be educated in Anglo schools, whether they and their parents wished it or not.”). According to Spicer, the boarding-school program extended widely throughout the U.S. Southwest, with “a fourth or more of the generation coming of school age from the 1890’s to the 1930’s experiencing boarding-school life.” *Id.* at 349.

209. WHITE, *supra* note 114, at 113.

210. COHEN’S, *supra* note 179, at 65.

211. See WHITE, *supra* note 114, at 91 (describing “reservations as alternatives to extermination”).

212. COHEN’S, *supra* note 179, at 66.

213. SPICER, *supra* note 50, at 338, 348.

214. *Id.* at 348.

215. WHITE, *supra* note 114, at 114.

216. COHEN’S, *supra* note 179, at 77.

American settlement under public land laws.²¹⁷ The policy's cumulative impact was astounding. "Indian land holdings were reduced from 138 million [acres] in 1887 to 48 million [acres] in 1934," and "an additional 60 million acres that were either ceded outright or sold to non-Indian homesteaders and corporations as 'surplus' lands are not included in the 90 million acre loss."²¹⁸ Colorado River Basin tribes were not immune from this process. The Southern Ute lost 33,473 acres, and the Ute Indian Tribe of the Uintah and Ouray Reservation lost nearly 30,000 acres.²¹⁹ Small portions of other reservations were also allotted.²²⁰

To summarize, during the roughly seventy-five-year period between the 1848 Treaty of Guadalupe Hidalgo's formation and the 1922 Colorado River Compact's drafting, the U.S. "civilizing" program for Native communities in and around the basin evolved as follows:

The Anglo-Americans, when they came into possession of the northern part of New Spain, thought of civilization at first as something peculiarly their own and not for the Indians. They began by setting up reservations as places where Indians could be isolated from the requirements of civilization. But speedily, as settlers encircled the reservations, the Anglo-Americans also began to think of themselves as bearers of civilization. They identified civilization with the American variety of the English language, the agricultural technology of the United States at that time, elementary schools with religious instruction, the holding of land by individual title, and usually some one of the Protestant varieties of Christianity.²²¹

Many other relational developments paralleled this "civilizing" program as it came into effect across the Colorado River Basin. During the latter half of the nineteenth century, the basin proved to be a place where human beings held distinct views on their relationships with other parts of nature (again, human-nature relations). Such distinctions can be seen across the layers of community. In the minds of most Euro-American immigrants, "nature existed largely as a collection of commodities. . . . [T]hey valued plants, animals, and minerals according to their utility" to humans.²²² Christian theology laid beneath this view: "God, they believed, had created nature for individual human beings to use, and it was their duty to make use of it."²²³ A similar perspective prevailed in the earlier

217. *Id.*; WHITE, *supra* note 114, at 115.

218. COHEN'S, *supra* note 179, at 79.

219. Daniel Cordalis & Amy Cordalis, *Civilizing Public Land Management in the Colorado River Basin*, in VISION & PLACE, *supra* note 12, at 252.

220. SPICER, *supra* note 50, at 349.

221. *Id.* at 5–6.

222. WHITE, *supra* note 114, at 212.

223. *Id.*

Spanish and Mexican communities—which also saw “nature as a set of commodities and resources”—albeit with the dominant focus on community versus individual ownership.²²⁴ Among Native communities in and around the basin there was much variation in beliefs about human-nature relations.²²⁵ As a whole, however, they differed by “their tendency to endow nature with a spiritual dimension largely lacking in white thought. Plants and animals were no more a simple commodity than were humans.”²²⁶

Important line drawing—paralleling the creation of Indian reservations—also took place during this period. Evolving views on human-nature relations were partly at play. As a threshold matter, the seven states with territory located inside the Colorado River Basin were carved out, California being the first to attain statehood in 1850, and Arizona and New Mexico being the last to do so in 1912.²²⁷ So, too, did public land policy pivot. While the latter half of the nineteenth century marked the zenith of the disposal era—privatization of federal lands being the paradigm driving the 1862 Homestead Act and its counterparts—retention of federal lands also emerged as a counterbalancing priority.²²⁸ Witness the geneses of the Organic Administration Act of 1897 underpinning the National Forest System, the Antiquities Act of 1906 authorizing national monuments, and the 1916 Organic Act establishing the National Park Service.²²⁹ Distinct values animated these novel laws emphasizing public ownership: conservation in some instances, preservation in others.²³⁰ As applied to the basin’s landscape (*e.g.*, Grand Canyon National Park’s 1919 designation)²³¹ and beyond, the laws revealed a nascent shift in American thought about relations between human beings and other parts of nature.²³²

224. *Id.*

225. *Id.*

226. *Id.* at 212–13.

227. For a map depicting these statehood dates, see *The U.S. Today, with Dates of Statehood Wall Map*, MAPS.COM, <https://www.maps.com/products/the-us-today-with-dates-of-statehood-wall-map-910xml> (last visited April 24, 2021).

228. See, *e.g.*, Paul Hirt, *Who Is the “Public” on the Colorado River Basin’s Public Lands?*, in VISION & PLACE, *supra* note 12, at 126.

229. See, *e.g.*, Robert B. Keiter, *John Wesley Powell and the National Park Idea*, in VISION & PLACE, *supra* note 12, at 109–10, 113.

230. Hirt, *supra* note 228, at 129; Keiter, *supra* note 229, at 113.

231. An Act to Establish the Grand Canyon National Park in the State of Arizona, 40 Stat. 1175, 1177 (Feb. 26, 1919).

232. This shift is most pronounced in relation to the national parks. As set forth in the 1916 Organic Act, their purpose is illustrative: “to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations.” An Act to Establish a National Park Service, and for Other Purposes, 39 Stat. 535, 535 (Aug. 25, 1916).

Laws governing human relations with and over water also surfaced at this time.²³³ Born in the mining camps of the California Gold Rush, the legal doctrine of prior appropriation affords one example.²³⁴ It hinges the existence of water rights on ongoing “beneficial use” of the water afforded by them—“use it or lose it”—and calls for allocating water according to temporal priority when not all water rights can be satisfied—“first in time, first in right.”²³⁵ Prior appropriation spread like wildfire across the Colorado River Basin and broader West over the latter half of the nineteenth century.²³⁶ While prior appropriation is state law, however, another paradigm-shifting piece of federal legislation came into existence around the twentieth century’s turn: the Reclamation Act of 1902.²³⁷ It brought into being the U.S. Reclamation Service (later renamed Bureau of Reclamation) and facilitated the construction, operation, and maintenance of federal water projects throughout the basin and region.²³⁸ The beneficiaries of prior appropriation and the Reclamation Act were the same Euro-American settlers whose mass migration compelled the U.S. “civilizing” program for Native communities.²³⁹ At the same time, tribes were not wholly invisible to the law during this period—at least on paper.²⁴⁰ In 1908, the U.S. Supreme Court handed down *Winters v. United States*, holding that the creation of Indian reservations for agricultural purposes implicitly reserved tribal water rights.²⁴¹

Would the values embedded in *Winters*, or those espoused by the National Park Service’s 1916 Organic Act, come to make a difference within the Law of the River? Its nearly century-long evolution began not long after these milestones.²⁴² Over the past century, which communities have *mattered* in Colorado River governance, and which communities have not? Looking at the big picture, how well has Colorado River governance navigated the reality of the basin as a community of communities? The answer undoubtedly lies in the eye of the beholder. And it’s to this confluence of the basin’s communities and institutions that we now turn.

233. See, e.g., Matthew McKinney & John E. Thorson, *Resolving Water Conflicts in the American West*, 17 WATER POL’Y 679, 687–91 (2015).

234. See, e.g., *Irwin v. Phillips*, 5 Cal. 140 (1855). Prior appropriation was initially recognized as formal law in this case.

235. See, e.g., JASON ANTHONY ROBISON & A. DAN TARLOCK, *LAW OF WATER RIGHTS AND RESOURCES* 286–87, 354–59 (2020).

236. See ROBERT G. DUNBAR, *FORGING NEW RIGHTS IN WESTERN WATERS* 59–133 (1983) (elegantly chronicling this pattern).

237. See DONALD J. PISANI, *TO RECLAIM A DIVIDED WEST: WATER, LAW, AND PUBLIC POLICY, 1848-1902* (1992), for a rich exploration of the Reclamation Act’s backstory.

238. See, e.g., *The Bureau of Reclamation: A Very Brief History*, U.S. BUREAU OF RECLAMATION, <https://www.usbr.gov/history/borhist.html> (last updated Aug. 15, 2018).

239. See *supra* Part II.

240. See, e.g., *Winters v. United States*, 207 U.S. 564 (1908).

241. *Id.*

242. See *supra* Part III.

III. LAYERS OF INSTITUTIONS

Nothing about the story above should suggest the Colorado River Basin's cultural fabric has been static as the American period has continued to play out. Change has been constant in both ancient and new communities within and adjacent to the basin throughout the Law of the River's evolution. This trajectory has been richly tracked in other writings.²⁴³ An unmistakable aspect of it has been explosive growth, as captured famously by the concept of the "Big Buildup."²⁴⁴ Cities in and around the basin "organized a concerted campaign" during the mid-twentieth century for "the rapid, wholesale development of . . . energy and water," resulting in "one of the most prodigious peacetime exercises of industrial might in the history of the world."²⁴⁵ In this fashion, the Big Buildup "made the modern Southwest," transforming it "from a backwater region of 8 million people at the end of World War II into a powerhouse of 32 million" by the century's end.²⁴⁶ Diversity accompanied this growth.²⁴⁷ Not only with respect to the types of parties entitled to use Colorado River system water, but even more significantly in public attitudes about the types of uses to which this water *ought* to be put.²⁴⁸

So human communities in and around the Colorado River Basin have increased in both scale and value pluralism since the Law of the River's 1922 genesis—a pattern circling back to the big-picture question posed a moment ago. How well has Colorado River governance navigated the reality of the basin as a community of communities? Put differently, how visible is the multi-colored character of the *whole* basin community in the institutions developed for Colorado River governance? We pursue these questions in two threads.

A. Relational Foundation

Our initial thread is foundational in nature. It accounts for the roughly forty-year period from 1922 to 1963 during which the Colorado River Compact,²⁴⁹ U.S.-

243. See, e.g., ADLER, *supra* note 12; FLECK, *supra* note 22; PHILIP. L. FRADKIN, A RIVER NO MORE: THE COLORADO RIVER AND THE WEST (1981); MARK W.T. HARVEY, A SYMBOL OF WILDERNESS: ECHO PARK AND THE AMERICAN CONSERVATION MOVEMENT (1994); MICHAEL HILTZIK, COLOSSUS: HOOVER DAM AND THE MAKING OF THE AMERICAN CENTURY (2010); RUSSELL MARTIN, A STORY THAT STANDS LIKE A DAM: GLEN CANYON AND THE STRUGGLE FOR CONTROL OF THE WEST (1989); DAVID OWEN, WHERE THE WATER GOES: LIFE AND DEATH ALONG THE COLORADO RIVER (2018); MARC REISNER, CADILLAC DESERT: THE AMERICAN WEST AND ITS DISAPPEARING WATER (1986); APRIL R. SUMMIT, AN ENVIRONMENTAL HISTORY OF THE COLORADO RIVER (2013); CHARLES WILKINSON, FIRE ON THE PLATEAU: CONFLICT AND ENDURANCE IN THE AMERICAN SOUTHWEST (1999).

244. WILKINSON, *supra* note 243, at xii.

245. *Id.*

246. *Id.*

247. See, e.g., Robison et al., *supra* note 21, at 18–19 (discussing value pluralism in the era of limits).

248. *Id.*

249. Compact, *supra* note 24.

Mexico Treaty,²⁵⁰ Upper Colorado River Basin Compact,²⁵¹ and U.S. Supreme Court decision in *Arizona v. California*²⁵² came about. Taken together, these four instruments make up the Law of the River's international and interstate water allocation framework.²⁵³ Even more critical than their allocation function, however—at least for present purposes—are the precedents they set for the relationships that make up Colorado River governance. They shaped both human relations and human-nature relations in and around the basin in ways reverberating here and now.

1. Colorado River Commission

It is again the cornerstone of the nearly century-old maze of laws and policies collectively known as the “Law of the River”: the Colorado River Compact.²⁵⁴ Yet the compact's legacy in the area of governance is somewhat confounding. While it placed federal-state relations over the Colorado River system into a mold that has persisted, the specific body that negotiated the compact, the Colorado River Commission, disbanded once the ink on the signature line had dried.²⁵⁵ There is no basinwide commission for Colorado River governance—“[n]o compact provision establishe[d] a commission or other permanent agency for administration of the agreement.”²⁵⁶ But that is not to say the compact is irrelevant in this space.

It took the Colorado River Commission approximately ten months to negotiate the compact—an undertaking spanning from January to November of 1922.²⁵⁷ The commission was composed of representatives from the federal government and the seven states whose boundaries overlie the basin—again, Colorado, Wyoming, Utah, and New Mexico on the one hand (colloquially, the “Upper Basin states”), and Arizona, California, and Nevada on the other (colloquially, the “Lower Basin states”).²⁵⁸ As this lineup shows, the federal sovereign and basin state sovereigns had seats at the table and voices in shaping the Law of the River's cornerstone. The

250. Treaty, *supra* note 27.

251. Upper Colorado River Basin Compact, ch. 48, 63 Stat. 31 (1949) [hereinafter Upper Basin Compact].

252. *Arizona v. California*, 373 U.S. 546 (1963).

253. Jason Anthony Robison, *The Colorado River Revisited*, 88 U. COLO. L. REV. 475, 480–81 (2017).

254. Compact, *supra* note 24.

255. See NORRIS HUNDLEY, JR., WATER AND THE WEST: THE COLORADO RIVER COMPACT AND THE POLITICS OF WATER IN THE AMERICAN WEST (2d ed. 2009), for the seminal work on the Colorado River Compact's legal history; see also ERIC KUHN & JOHN FLECK, SCIENCE BE DAMMED: HOW IGNORING INCONVENIENT SCIENCE DRAINED THE COLORADO RIVER (2019), for an complementary source; see also *Minutes and Record of the First Eighteen Sessions of the Colorado River Commission Negotiating the Colorado River Compact of 1922*, <http://www.riversimulator.org/Resources/LawOfTheRiver/MinutesColoradoRiverCompact.pdf> (last visited April 24, 2021).

256. Charles J. Meyers, *The Colorado River*, 19 STAN. L. REV. 1, 13 (1966).

257. HUNDLEY, *supra* note 255, at 138–214.

258. See Compact, *supra* note 24, at preamble, for the identities of the federal and state commissioners.

same is *not* true for other communities whose connections to the basin ran and still run much deeper. Tribal representation on the commission? That question sadly may have provoked laughter at the negotiations, as they occurred during the allotment era of federal Indian policy and embodied its bullheaded focus on “civilization and assimilation” of Native peoples.²⁵⁹ The Colorado River Commission made “[n]o attempt . . . to discover how many Indians were in the basin or what their water needs were.”²⁶⁰ While *Winters* had been on the books for fourteen years, “[t]he commission simply assumed that the water rights of Indians were negligible.”²⁶¹ “Indians were a forgotten people in the Colorado Basin, as well as in the country at large.”²⁶² And so, too, was Mexico pushed to the margins. It formally requested to be “represented” on the commission and “given consideration in the studies and projects.”²⁶³ But that ask went nowhere; instead, the commission relegated Mexico to observer status.²⁶⁴

The relationships animating the compact negotiations can be gleaned on the document’s face—by what’s there and what’s not. There is a clear focus on informal cooperation between the federal and state sovereigns on technical aspects of Colorado River governance. Article V actually uses the term “cooperate” in this vein.²⁶⁵ Neither it nor its dispute-resolution-focused counterpart, Article VI, suggest anything resembling a formal governance entity, however.²⁶⁶ Whatever the Colorado River Commission was, it had evaporated.

Precisely what the compact does at the margins should also be brought to light. The invisibility of the basin’s tribal sovereigns not only can be seen from the negotiations. It’s unmistakable in Article VII’s text: “Nothing in this compact shall be construed as affecting the obligations of the United States of America to Indian tribes.”²⁶⁷ Despite *Winters* and the federal trustee’s obligations, this provision is the compact’s sole mention of the Colorado River Basin’s thirty tribal sovereigns—a one-sentence disclaimer. And the condescension and dismissiveness accompanying the provision’s drafting cannot be ignored, both characteristics illuminated brilliantly by the Colorado River Commission’s chairman, Herbert Hoover:

259. COHEN’s, *supra* note 179, at 77 (internal quotations omitted).

260. HUNDLEY, *supra* note 255, at 211. According to Hundley, there were “nearly sixty thousand Indians on about thirty reservations in the basin” at this time. *Id.* at 80.

261. *Id.* at 211 (internal quotations omitted). The U.S. Supreme Court handed down *Winters* in 1908. 207 U.S. 564 (1908).

262. HUNDLEY, *supra* note 255, at 80.

263. *Id.* at 175.

264. *Id.* at 175–76.

265. Compact, *supra* note 22, at Art. V (calling for cooperation between the “chief official of each signatory State charged with the administration of water rights,” the “Director of the United States Reclamation Service,” and the “Director of the United States Geological Survey.”). Meyers, *supra* note 256, at 13 (“Article V requires certain state and federal officials to cooperate in gathering and disseminating information regarding run-off and use of system water.”).

266. Compact, *supra* note 22, at Art. VI. Meyers, *supra* note 256, at 13 (“[A]rticle VI contemplates the appointment of ad hoc commissioners to settle controversies arising between the signatory states.”).

267. Compact, *supra* note 22, at Art. VII.

"You always find some congressmen . . .," he explained, "who will bob up and say, 'What is going to happen to the poor [I]ndian?' We thought we would settle it while we were at it." And the way to settle it, he suggested, was his "wild Indian article" The commissioners unanimously approved his suggestion.²⁶⁸

Mexico fared slightly better in the compact's text. It anticipated a future treaty and prescribed how treaty flows would be supplied by the basin states.²⁶⁹ Of further note at the margins is the Colorado River system itself, as the compact not only reflected contemporary views on human relationships with the river system, but also set the stage for future conflicts involving competing views on that subject. Should the river system be treated as a mere conduit for human water consumption? Or might it be approached as a *living* river system? The compact clearly pointed Colorado River governance in the former direction, with its core, animating concern being "beneficial consumptive use" of Colorado River system water.²⁷⁰

2. International Boundary and Water Commission

Colorado River governance at the international level looks quite different than at the domestic basinwide level in the United States. While the Colorado River Compact's signing in 1922 marked the end of the line for the Colorado River Commission, the U.S.-Mexico Treaty's formation in 1944 brought into being a new (or updated) body to navigate the nation-states' relations over the Colorado River.²⁷¹ The International Boundary and Water Commission (IBWC) constitutes a formal entity for Colorado River governance. In this characteristic, the IBWC stands apart from the informal, ad hoc federal-state arrangements called for by Articles V and VI of the compact,²⁷² not to mention the defunct commission.

It took several decades during the first half of the twentieth century for the U.S.-Mexico Treaty—and thus the IBWC—to come into existence.²⁷³ When the treaty ultimately appeared towards the end of World War II, the IBWC supplanted its predecessor, the International Boundary Commission, and was entrusted with

268. HUNDLEY, *supra* note 255, at 212.

269. Compact, *supra* note 22, at Art. III(c).

270. Beneficial consumptive use of Colorado River system water is what frames the compact's apportionment in Article III. *Id.* at Art. III(a)–(b). Further indicia of this orientation appear in Article II's definition of "domestic use" and Article IV's water-use hierarchy. *Id.* at Arts. II(h), IV(a)–(b).

271. Treaty, *supra* note 25. The treaty also applies to the Rio Grande and Tijuana River.

272. Compact, *supra* note 22, at Art. V.

273. Succinct coverage of the treaty's formation can be found in Norris Hundley, Jr., *The West Against Itself: The Colorado River—An Institutional History*, in *NEW COURSES FOR THE COLORADO RIVER* 9 (Gary D. Weatherford & F. Lee Brown eds., 1986). More extensive studies include Charles J. Meyers & Richard L. Noble, *The Colorado River: The Treaty with Mexico*, 19 *STAN. L. REV.* 367 (1966), and NORRIS HUNDLEY, JR., *DIVIDING THE WATERS: A CENTURY OF CONTROVERSY BETWEEN THE UNITED STATES AND MEXICO* (1966).

treaty administration.²⁷⁴ Consisting of a U.S. Section and a Mexican Section,²⁷⁵ the treaty spells out the IBWC's composition, including a requirement that each Section shall have an Engineering Commissioner as its head.²⁷⁶ Likewise, the treaty specifies the IBWC's powers and duties, which involve a host of technical matters (e.g., installation of gaging stations, recordkeeping and dissemination of treaty-flow data),²⁷⁷ but also extend to critical non-technical subjects. Examples of the latter sort include the IBWC's authority over treaty enforcement and dispute resolution.²⁷⁸ More significant than the details of these aspects of international Colorado River governance is the core fact that the treaty creates and defines the composition of a formal governance entity.²⁷⁹

Yet one aspect of the IBWC's approach to treaty administration deserves special attention: the minutes system.²⁸⁰ It has proven clutch over the roughly seventy-five years of the treaty's existence, with no fewer than 325 minutes adopted as of this writing.²⁸¹ Treaty minutes are implementation agreements—agreements adopted by the IBWC to implement the treaty's provisions without amending its text.²⁸² More specifically, the treaty calls for the IBWC to record its decisions as minutes, and maps out a process through which minutes take effect.²⁸³ The default rule is that silence by either government during a thirty-day period following a minute's pronouncement by the IBWC constitutes approval.²⁸⁴ Conversely, if either government expresses disapproval of a minute during the thirty-day period, the treaty requires the governments to “take cognizance of the matter” and work toward an agreement.²⁸⁵ All told, this component of international

274. Treaty, *supra* note 25, at Art. 2. Specifically, the IBWC was entrusted with “[t]he application of the present Treaty, the regulation and exercise of the rights and obligations which the two Governments assume thereunder, and the settlement of all disputes to which its observance and execution may give rise.” *Id.*

275. *Welcome*, INTERNATIONAL BOUNDARY & WATER COMMISSION, UNITED STATES AND MEXICO, UNITED STATES SECTION, <https://www.ibwc.gov/home.html> (last visited April 24, 2021); *Notas de Actualidad*, COMISIÓN INTERNACIONAL DE LÍMITES Y AGUAS ENTRE MÉXICO Y ESTADOS UNIDOS, <https://cila.sre.gob.mx/cilanorte/> (last visited April 24, 2021).

276. Treaty, *supra* note 25, at Art. 2. “The Commissioner, two principal engineers, a legal adviser, and a secretary . . . shall be entitled in the territory of the other country to the privileges and immunities appertaining to diplomatic officers.” *Id.*

277. *Id.* at Arts. 12(d), 24(f).

278. *Id.* at Arts. 24(c)–(d).

279. The IBWC has not been immune from criticism as a governance entity. See generally Robert J. McCarthy, *Executive Authority, Adaptive Treaty Interpretation, and the International Boundary and Water Commission, U.S.-Mexico*, 14 U. DENVER WATER L. REV. 197 (2011).

280. Treaty, *supra* note 25, at Art. 25.

281. *Minutes Between the United States and Mexican Sections of the IBWC*, INT’L BOUNDARY & WATER COMMISSION, U.S. AND MEX., U.S. SECTION, https://www.ibwc.gov/Treaties_Minutes/Minutes.html (last visited April 24, 2021).

282. Robison, *supra* note 253, at 505.

283. Treaty, *supra* note 27, at Art. 25.

284. *Id.*

285. *Id.*

Colorado River governance has enabled the treaty to be implemented adaptively in the face of challenges that either weren't anticipated or prioritized when the instrument was adopted—delta restoration and climate change being prime examples.²⁸⁶

Although the treaty's approach to governance is much different than the Colorado River Compact's, there are a couple pieces of notable commonality. First, just as Native communities had no voice in the compact's formation, Indigenous Peoples on either side of the international border do not appear to have had any hand in the treaty's formation.²⁸⁷ Its text is silent about Indigenous Peoples.²⁸⁸ Not even an analogue to the compact's perfunctory "Wild Indian article" (*i.e.*, Article VII) can be seen.²⁸⁹ Second, the treaty embodies the notion of the Colorado River system as a conduit for human water consumption. There is no reference to the Colorado River Delta's ecology (or the like), the water-use hierarchy prioritizes consumptive uses, and Mexico's allocation is expressed as a quantified allocation to be delivered annually by the United States.²⁹⁰ No sense of a *living* river system emanates from the document.

3. Upper Colorado River Commission

Moving far upstream from the international border—to the vast high desert country, majestic mountains, and sheer canyons above Lee Ferry—it becomes apparent that the Colorado River Compact is not the only interstate agreement superimposed on the Colorado River system. It has a counterpart with the Upper Colorado River Basin Compact (Upper Basin Compact).²⁹¹ In its approach to governance, this instrument resembles the U.S.-Mexico Treaty more closely than it does the cornerstone, establishing a formal governance entity ("interstate administrative agency") in the Upper Basin called the Upper Colorado River Commission (UCRC).²⁹²

286. *See, e.g.*, INT'L BOUNDARY & WATER COMM'N, EXTENSION OF COOPERATIVE MEASURES AND ADOPTION OF A BINATIONAL WATER SCARCITY CONTINGENCY PLAN IN THE COLORADO RIVER BASIN, MINUTE No. 323 (Sept. 21, 2017), <https://www.ibwc.gov/Files/Minutes/Min323.pdf> [hereinafter MINUTE 323]; INT'L BOUNDARY & WATER COMM'N, INTERIM INTERNATIONAL COOPERATIVE MEASURES IN THE COLORADO RIVER BASIN THROUGH 2017 AND EXTENSION OF MINUTE 318 COOPERATIVE MEASURES TO ADDRESS THE CONTINUED EFFECTS OF THE APRIL 2010 EARTHQUAKE IN THE MEXICALI VALLEY, BAJA CALIFORNIA, MINUTE 319 (Nov. 20, 2012), https://www.ibwc.gov/Files/Minutes/Minute_319.pdf [hereinafter MINUTE 319]. Minutes 319 and 323 illustrate adaptive treaty implementation in these areas. *Id.*

287. *See, e.g.*, HUNDLEY, *supra* note 255; Meyers & Noble, *supra* note 273. Neither Hundley nor Meyers and Noble mention Indigenous Peoples in their lengthy studies of the treaty's legal history. *Id.*

288. *See Treaty, supra* note 27.

289. Compact, *supra* note 24, at Art. VII; HUNDLEY, *supra* note 255, at 212.

290. Treaty, *supra* note 27, at Arts. 3, 10. The hierarchy does address the non-consumptive use of international waters for hydropower, navigation, and fishing and hunting. *Id.* at Art. 3.

291. *See* Upper Basin Compact, *supra* note 251.

292. *Id.* at Art. VIII.

The Upper Basin Compact's genesis—and thus that of the UCRC—was heralded by much less fanfare (read: drama) than the Colorado River Compact's. Preceded by two years of data gathering and field meetings, the Upper Basin Compact's negotiation took place in Vernal, Utah—adjacent to Dinosaur National Monument—over a three-week period in July 1948.²⁹³ The catalyst at this time was a shared interest among Upper Basin leaders in securing water infrastructure for which a compact had been deemed a prerequisite.²⁹⁴ Similar to the Colorado River Compact, the Upper Basin Compact was shaped by representatives of the federal sovereign, Upper Basin state sovereigns, and the State of Arizona—collectively, the “Upper Colorado River Basin Compact Commission.”²⁹⁵ This body adjourned *sine die* in Salt Lake City on August, 5, 1949, but not without creating a successor for compact administration.²⁹⁶

The UCRC is a federal-state entity largely, though not wholly, in the mold of the negotiating body that brought it about.²⁹⁷ Composed of one commissioner from each Upper Basin state—as well as a federal commissioner “if designated by the President”—the UCRC employs a secretary and any “engineering, legal, clerical and other personnel as, in its judgment, may be necessary for the performance of its functions.”²⁹⁸ To administer the compact's apportionment,²⁹⁹ the UCRC is charged with determining “the quantity of the consumptive use of water” from the Colorado River system by each Upper Basin state.³⁰⁰ And the UCRC is vested with a host of related powers: installing gaging stations, engaging in cooperative water-supply studies, collecting and disseminating hydrological data, and making findings about critical subjects such as “the quantity of water deliveries at Lee Ferry” and “the necessity for and the extent of the curtailment of use” by the Upper Basin states to

293. *E.g.*, HUNDLEY, *supra* note 255, at 300–01; Norris Hundley, Jr., *Clio Nods: Arizona v. California and the Boulder Canyon Act – A Reassessment*, 3 W. HIST. Q. 17, 28–29 (1972); Meyers, *supra* note 256, at 27–31.

294. Hundley, *supra* note 293, at 28.

295. *See* Upper Basin Compact, *supra* note 251, at preamble. The identities of these representatives are noted in the preamble of the Upper Basin Compact. *Id.* Arizona was represented in the negotiations because its northeastern corner lies in the Upper Basin. The Upper Colorado River Basin Compact Commission compiled an official record of its proceedings and related documents in three volumes. Volumes 1 and 2 contain a record of the Commission's eleven meetings, while Volume 3 contains the Engineering Advisory Committee's Final Report and an Inflow-Outflow Manual. An overview of the volumes and chronological list of the meetings can be found in the Explanatory Note at the beginning of UPPER COLORADO RIVER BASIN COMPACT COMMISSION, OFFICIAL RECORD, VOL. I (1949) (on file with author) [hereinafter OFFICIAL RECORD].

296. The adjournment date appears in the Explanatory Note at the beginning of OFFICIAL RECORD, *supra* note 295.

297. Although it was represented at the Upper Basin Compact negotiations, Arizona does not have a commissioner on the UCRC. Upper Basin Compact, *supra* note 251, at preamble, Art. VIII.

298. Upper Basin Compact, *supra* note 251, at Art. VIII(a), (c); *About the UCRC*, UPPER COLORADO RIVER COMMISSION, <http://www.ucrccommission.com/about-us/> (last visited April 24, 2021).

299. Upper Basin Compact, *supra* note 251, at Art. III.

300. *Id.* at Art. VI.

ensure compliance with the Colorado River Compact.³⁰¹ Notably, although the UCRC's findings "shall constitute prima facie evidence of the facts found" in any judicial or administrative proceeding, the Upper Basin Compact does *not* vest the UCRC with compact-enforcement power.³⁰²

At the margins of the Upper Basin Compact—though less so than with the Colorado River Compact—are Native communities whose ancestors inhabited and visited the Colorado Plateau and diverse ranges of the Rocky Mountains for centuries or millennia before Euro-American settlers began filling in Utah's Wasatch Front, Colorado's Front Range, and other Upper Basin locales. Tribal sovereigns have no seat at the UCRC's table.³⁰³ It is exclusively a federal-state body.³⁰⁴ Nor did tribal sovereigns have an opportunity to participate in negotiating the Upper Basin Compact.³⁰⁵ It was born during the termination era of federal Indian policy—"the most concerted drive against Indian property and Indian survival since the removals following the act of 1830 and the liquidation of tribes and reservations following 1887."³⁰⁶

Yet Native communities were on the commissioners' minds to some extent at the negotiations.³⁰⁷ And the Upper Basin Compact's text does show some progress compared to what was done in the Colorado River Compact.³⁰⁸ An analogue to the dismissive "wild Indian article" appears in the Upper Basin Compact: "Nothing in this Compact shall be construed as . . . [a]ffecting the obligations of the United States of America to Indian tribes."³⁰⁹ But this broad disclaimer coexists with provisions prohibiting Upper Basin states from "deny[ing] the right of the United States of America . . . to acquire rights to the use of water," and mandating that "[t]he consumptive use of water by the United States of America or any of its . . .

301. *Id.* at Arts. IV, VIII(d).

302. *Id.* at Art. VIII(g); Meyers *supra* note 256, at 34–35.

303. *See* Upper Basin Compact, *supra* note 251.

304. *Id.* at Art. VIII(a).

305. COHEN's, *supra* note 179.

306. *Id.* at § 1.06.

307. For specific excerpts within the negotiation minutes, *see* the "Indian rights, art. xix" entry on page xi of the Subject Index at the beginning of OFFICIAL RECORD, *supra* note 295. One compelling excerpt comes from the remarks of Mr. Paul B. Palmer—affiliated with the Bureau of Reclamation's Hammond Project—which were delivered to the commission at its third meeting on November 2, 1946, in Farmington, New Mexico:

There are a lot of things I could tell you about why the Navajo Indian situation is a national disgrace. It is also a disgrace to the State of New Mexico and to the State of Arizona in particular. But something should be done by this body to recognize the rights of these people and to do something about it. I am not telling you what to do but I think something should be done and we should recognize that these people have some rights because they were here a long time before we were here. Thank you. (Applause.)

Id. at 140.

308. *See* Upper Basin Compact, *supra* note 251.

309. *Id.* at Art. XIX(a).

wards shall be charged as a use by the State in which the use is made.³¹⁰ No doubt “wards” is a loaded term. *Winters*, however, at least implicitly shows up (*contra* the Colorado River Compact).

As far as human-nature relations within Colorado River governance, the Upper Basin Compact didn’t break new ground. The “Colorado River system as conduit” perspective reigned at the time—or, put differently, the notion of a *living* river system remained at the margins. It is impossible to miss the Upper Basin Compact’s consumptive-use orientation in its apportionment, water-use hierarchy, and definition provisions.³¹¹ What happened with the Bureau of Reclamation’s proposed siting of dams in Dinosaur National Monument a few years after these provisions had been penned, however, marked a cultural shift that still echoes through Colorado River governance.³¹² It also made Arizona want its turn.

4. Lower Colorado River Watermaster

Arizona v. California federalized the Lower Colorado River in 1963.³¹³ Filed eleven years earlier to lay groundwork for the wildly coveted Central Arizona Project, the case wasn’t Arizona’s first attempt to enlist the Supreme Court’s help in resolving conflicts with a 1,000-pound-gorilla neighbor, California, over the states’ shared border.³¹⁴ On this occasion, however, the Court granted Arizona’s request—a solicitation revealing dysfunction in Lower Basin relationships that contrasted starkly with what the Upper Basin states had been able to accomplish a few years before.³¹⁵ And distinctions of this sort don’t end there.

Lower Colorado River governance can be summed up succinctly: the Secretary of the Interior is the watermaster. For the first time in U.S. history, the Supreme

310. *Id.* at Arts. VII, IX(a).

311. *See id.* at Art. II(m) (defining “domestic use” as “use of water for household, stock, municipal, mining, milling, industrial, and other like purposes”), Art. III(a) (apportioning “consumptive use of water” among Upper Basin states and Arizona), Art. XV(a) (prioritizing water “use and consumption . . . for agricultural and domestic purposes” above water “impounded and used for the generation of electrical power.”).

312. *See HARVEY, supra* note 243, for a discussion of the epic fight over proposed siting of the Echo Park and Split Mountain dams in Dinosaur National Monument.

313. *Arizona v. California*, 373 U.S. 546 (1963). In conjunction with the case’s fiftieth anniversary in 2013, the University of Colorado law library created a collection of primary sources associated with the case. *Arizona v. California*, WILLIAM A. WISE LAW LIBRARY, DIGITAL ARCHIVE, <https://lawcollections.colorado.edu/arizona-v-california/> (last visited April 24, 2021). The *Arizona Journal of Environmental Law & Policy* also published a series of articles about the case and its legacy. *See* Lawrence J. MacDonnell, *Arizona v. California: Its Meaning and Significance for the Colorado River and Beyond after Fifty Years*, 4 ARIZ. J. ENVTL. L. & POL’Y 88 (2013). Additional historical scholarship is widely available. *See, e.g.,* Meyers, *supra* note 256, at 38–43, 43 n.184; HUNDLEY, *supra* note 255, at 302–06, 306 nn.50–51.

314. Arizona had filed three prior suits in the U.S. Supreme Court during the 1930s. *Arizona v. California*, 298 U.S. 558 (1936); *Arizona v. California*, 292 U.S. 341 (1934); *Arizona v. California*, 283 U.S. 423 (1931); *see also* HUNDLEY, *supra* note 255, at 288–95.

315. *Arizona v. California*, 373 U.S. 546 (1963).

Court held in *Arizona v. California* that Congress had established a statutory apportionment for an interstate river, the Lower Colorado River (excluding its tributaries), when enacting the Boulder Canyon Project Act (BCPA) in 1928.³¹⁶ “It would have amazed the Congress of thirty-five years earlier to know what it was supposed to have done.”³¹⁷ But irrespective of whether the Court got *Arizona v. California* wrong, its decree and the BCPA placed a dizzying array of hats atop the Interior Secretary’s head. Most notably, it is the secretary who implements the decree’s apportionment, annually assessing water-supply conditions along the Lower Colorado River, and allocating water among parties in Arizona, California, and Nevada.³¹⁸ Not all water users enjoy secretarial water storage and deliveries, however, but rather only those with whom the secretary has formed contracts (or reserved rights holders).³¹⁹ Formation of such contracts and hydropower counterparts was a condition precedent for federal financing and construction of the infrastructure authorized by the BCPA: Hoover Dam and the All-American Canal.³²⁰ Piling on these infrastructural and contractual responsibilities, the secretary is also the Lower Colorado River accountant, obligated by the *Arizona v. California* decree to publish reports with data on water releases and consumption under the apportionment and the U.S.-Mexico Treaty.³²¹

This federalized governance structure is plainly different than the UCRC as outlined in the Upper Basin Compact, as well as the disbanded Colorado River Commission that drafted the Colorado River Compact. Yet there is important overlap between these earlier instruments and the *Arizona v. California* decree. It concerns how the Colorado River system is seen—again, as a conduit for human water consumption. The decree’s apportionment is revealing, hinging the Secretary of the Interior’s water-supply determination on the amount of Lower Colorado River water available to satisfy quantified levels of “annual consumptive use” within

316. *Id.* at 560; see also Boulder Canyon Project Act, P.L. No. 642 (1928). The Court issued a 5-3 split opinion in the case. *Arizona v. California*, 373 U.S. at 546. Justice Black authored the majority opinion, while Justice Harlan and Justice Douglas wrote lengthy dissents. *Id.* The majority’s holdings largely (though not wholly) reflected legal conclusions set forth in a 451-page report prepared by Special Master Simon Rifkind. *Arizona v. California*, Simon H. Rifkind, *Special Master*, Report (Dec. 5, 1960), <http://hdl.handle.net/10974/312> [hereinafter Rifkind Report].

317. Hundley, *supra* note 273, at 32. For a thorough critique of the decision, see Hundley, *supra* note 293.

318. A three-tier structure governs this process as outlined in Art. II(B)(1)-(3) of the Court’s consolidated decree. *Arizona v. California*, 547 U.S. 150, 155–56 (2006). The secretary also has authority under Art. II(B)(6) of the decree to reallocate on a one-year basis apportioned but unused water among the Lower Basin states. *Id.* at 156.

319. This contract requirement appears in Art. II(B)(5) of the decree. *Id.* at 155. The proviso addressing water releases for reserved rights holders can be found in Art. II(D). *Id.* at 157.

320. BCPA, *supra* note 316, at § 4(b).

321. This record-keeping obligation is set forth in Art. V of the decree. *Arizona*, 547 U.S. at 164–65. The water accounting reports can be accessed at *Boulder Canyon Operations Office — Programs and Activities*, BUREAU OF RECLAMATION, <https://www.usbr.gov/lc/region/g4000/wtracct.html> (last visited April 24, 2021).

the Lower Basin states.³²² So, too, do the decree's water-use hierarchy and definitions section lack any notion of the Lower Colorado River as a *living* river.³²³ It appears inanimate on the page.

Arizona v. California, however, did stretch Colorado River governance in one key way relevant to human-nature relations. Building on *Winters* a half-century earlier, the Supreme Court broke new ground in *Arizona v. California* by extending the reserved rights doctrine from Indian reservations to federal reservations. Without offering an independent analysis, the Court adopted Special Master Simon Rifkind's ruling that "the principle underlying the reservation of water rights for Indian Reservations was equally applicable to other federal establishments."³²⁴ *Arizona v. California* thus recognized federal reserved rights for three reservations along the Lower Colorado River: Lake Mead National Recreation Area, Havasu Lake National Wildlife Refuge, and Imperial National Wildlife Refuge.³²⁵ To fulfill their purposes, the Court's decree spells out annual amounts of water that may be diverted or consumed from the river.³²⁶

And that's not all there is to say at the historical margins of Colorado River governance. *Arizona v. California* took *Winters* in a new direction with respect to Indian reserved rights, too. How much water should tribes be authorized to use under them? More precisely, what method should be employed to quantify Indian reserved rights implicitly created upon the establishment of Indian reservations for agricultural purposes? Not only did the Supreme Court lay to rest any question about *Winters'* adherence within the Colorado River Basin when vetting those questions, it also announced the practicably irrigable acreage (PIA) standard as a quantification method.³²⁷ At stake were reserved rights claims asserted for five Indian reservations along the Lower Colorado River: Chemehuevi, Cocopah, Fort Yuma, Colorado River, and Fort Mojave.³²⁸ Both to elucidate *Arizona v. California*, as well as to connect the case to the U.S. "civilizing" program described in the previous Part,³²⁹ the Court's penetrating description of the tribes' reservations and water's essentiality to them should be quoted:

322. The phrase "annual consumptive use" appears throughout Art. II(B)(1)-(3). *Arizona*, 547 U.S. at 155-56.

323. The decree's water-use hierarchy in Art. II(A) lists irrigation and domestic uses as consumptive uses and river regulation, navigation, flood control, and hydropower as non-consumptive uses. *Id.* at 154-55. The decree's definitions of "consumptive use" and "domestic use" in Art. I are also notable. *Id.* at 153-54.

324. *Arizona v. California*, 373 U.S. 546, 601 (1963); Rifkind Report, *supra* note 316, at 291-300.

325. *Arizona*, 373 U.S. at 601. The Court also recognized a federal reserved right for the Gila National Forest, which lies within the Gila River Basin in southwestern New Mexico. *Id.*

326. These federal reserved rights appear in Art. II(D)(6)-(8) of the decree. *Arizona*, 547 U.S. at 158-59.

327. *Arizona*, 373 U.S. at 600-01.

328. *Id.* at 595 n.97.

329. See *supra* Part II.C.

It can be said without overstatement that when the Indians were put on these reservations they were not considered to be located in the most desirable area of the Nation. It is impossible to believe that when Congress created the great Colorado River Indian Reservation and when the Executive Department of this Nation created the other reservations they were unaware that most of the lands were of the desert kind—hot, scorching sands—and that water from the river would be essential to the life of the Indian people and to the animals they hunted and the crops they raised.³³⁰

Thus, alongside the federal reserved rights just mentioned, the *Arizona v. California* decree sets forth Indian reserved rights for the five tribal sovereigns.³³¹ These rights are substantial in scope—at least on paper—authorizing annual diversions of 719,248 acre-feet from the Lower Colorado River in the case of the Colorado River Indian Tribes.³³² In addition, although serving to quantify the reserved rights, the PIA standard was explicitly not intended to be a straitjacket on the types of uses to which water could be put under the rights. Rather, the PIA standard “shall constitute the means of determining quantity of adjudicated water rights but shall *not* constitute a restriction of the usage of them to irrigation or other agricultural application.”³³³

B. Relational Adaptation

But not only did *Arizona v. California* and its predecessors lay a distributional foundation in and around the Colorado River Basin—a foundation for how Colorado River system water would be apportioned by the Law of the River’s allocation framework.³³⁴ Arguably of even greater consequence is the fact that the instruments laid a relational foundation for how the river system would be governed. Which formal or informal bodies would be engaged? Who would have a voice within those entities? How would they be composed—structures, processes, etc.—to enable the basin’s community of communities to participate? What space, if any, would there be for the notion of a *living* river system? In one form or another, all these issues were broached, explicitly or implicitly, while the relational foundation took shape.

Adaptation has been paramount ever since. Just as the Law of the River’s allocation framework has been forced to adapt to climate change’s impacts on the Colorado River Basin’s hydrology, so too has Colorado River governance witnessed

330. *Arizona*, 373 U.S. at 598–99.

331. The Indian reserved rights appear in Art. II(D)(1)–(5) of the decree. *Arizona*, 547 U.S. at 157–58.

332. *Id.* at 158.

333. *Id.* at 168 (emphasis added).

334. Robison, *supra* note 253, at 480–81.

a variety of adaptations since *Arizona v. California* was handed down.³³⁵ Both the Law of the River's distributional foundation and relational foundation have proven adaptive—at least up to a point.

Governance adaptations have surfaced in several forms involving human-nature relations and human relations. One form consists of collaborative efforts to address biodiversity loss and ecosystem protection and restoration. Another form centers on tribal water rights—collaborative endeavors to better understand them and to secure their legal recognition and quantification. And a final form has been driven by climate change and collaborative undertakings to adapt the Law of the River's allocation framework to it. Taken as a whole, adaptations of these sorts show how Colorado River governance is evolving, albeit gradually and incrementally, along a path whose defining values include a game changer: inclusivity. It has transformative power—the power to align Colorado River governance institutions with the Colorado River Basin as a community of communities. That's exactly what the future should hold.

1. Biodiversity & Ecosystems

The Colorado River Delta is a good place to start for evidence of the collaborative trend. Minutes 319 and 323 of the U.S.-Mexico Treaty are a proverbial smoking gun.³³⁶ Adopted via the treaty's minutes system in 2012 and 2017, respectively, both documents are replete with innovative content.³³⁷ Most important for present purposes is one critical priority involving human-nature relations that is impossible to overlook: the delta's ecology.

Collaborative efforts aimed at protecting and restoring the Colorado River Delta trace back at least two decades to Minute 306 and a preceding joint declaration.³³⁸ "Collaboration is growing between [national] authorities," described Minute 306, "as well as between scientific, academic, and non-government organizations in the two countries which have an interest in preserving the Colorado River delta ecology."³³⁹ In line with this pattern, the minute broke new ground in Colorado River governance by institutionalizing cooperation over the

335. See generally *id.* (examining pattern of "adaptive framing" within allocation framework).

336. MINUTE 323, *supra* note 286; MINUTE 319, *supra* note 286.

337. See *infra* Part III.B.3 for a discussion of Minute 323's novel, collaborative approach to implementation of the international apportionment.

338. INT'L BOUNDARY & WATER COMM'N, MINUTE NO. 306: CONCEPTUAL FRAMEWORK FOR UNITED STATES-MEXICO STUDIES FOR FUTURE RECOMMENDATIONS CONCERNING THE RIPARIAN AND ESTUARINE ECOLOGY OF THE LIMITROPHE SECTION OF THE COLORADO RIVER AND ITS ASSOCIATED DELTA (2000), <https://www.ibwc.gov/Files/Minutes/Min306.pdf> [hereinafter MINUTE 306]; JOINT DECLARATION BETWEEN THE DEPARTMENT OF THE INTERIOR (DOI) OF THE UNITED STATES OF AMERICA AND THE SECRETARIAT OF ENVIRONMENT, NATURAL RESOURCES AND FISHERIES (SEMARNAP) OF THE UNITED MEXICAN STATES TO ENHANCE COOPERATION IN THE COLORADO RIVER DELTA (2000), https://law2.arizona.edu/library/research/guides/portals/Original%20Appendices/08_2000JointDeclaration.pdf.

339. MINUTE 306, *supra* note 338, at 1.

delta. Specifically, it established “a framework for cooperation by the United States and Mexico through the development of joint studies that include possible approaches to ensure use of water for ecological purposes in this reach and formulation of recommendations for cooperative projects, based on the principle of an equitable distribution of resources.”³⁴⁰

Minutes 319 and 323 are outgrowths of this cooperative framework. Minute 319 established an environmental flows pilot program for the Colorado River Delta that called for the delivery of 158,088 acre-feet of water as base flow and pulse flow.³⁴¹ Participants in the program not only included the United States and Mexico, but also a binational coalition of environmental organizations, all of which were represented on an Environmental Flows Team that developed a delivery plan for the flows.³⁴² Five years later, Minute 323 carried the torch further, adopting a new environmental flows program that reflects “continued interest” in the delta’s ecology.³⁴³ Yet again the relationships bridging this program are key. The United States, Mexico, and a binational coalition of environmental organizations teamed up to contribute 210,000 acre-feet of water and \$27 million dollars in one-third increments, though even larger contributions had been recommended by a Binational Environmental Work Group.³⁴⁴ Composed of representatives from the United States, Mexico, and the binational coalition, that Work Group will implement the program until Minute 323’s expiration on December 31, 2026.³⁴⁵

Floating upstream from the delta, related collaboration in Colorado River governance can be seen in the U.S. portion of the basin, growing partly from the Endangered Species Act (ESA) and partly from the Grand Canyon Protection Act.³⁴⁶ Three multi-stakeholder programs have spawned from the former statute, all of which aim to recover (or work toward the recovery of) endangered or threatened fish species: (1) the Upper Colorado River Endangered Fish Recovery Program

340. *Id.* at 2.

341. MINUTE 319, *supra* note 286, at 11–14. 52,696 acre-feet and 105,392 acre-feet were specified for base flow and pulse flow, respectively. *Id.* at 14. The environmental results of the pilot program are addressed in INT’L BOUNDARY & WATER COMM’M, MINUTE 319 COLORADO LIMITROPHE AND DELTA ENVIRONMENTAL FLOWS MONITORING FINAL REPORT (2018), https://www.ibwc.gov/Files/Minute_319_Monitoring_Report_112818_FINAL.pdf [hereinafter FINAL REPORT]. Base flow volumes of 57,621 acre-feet ended up being delivered to three restoration areas (Miguel Aleman, El Chausse, and Laguna Grande) and to the Colorado River channel in Mexico during Minute 319’s term. *Id.* at 11. The pulse flow was delivered over an eight-week period from March 23, 2014 to May 18, 2014. *Id.*

342. MINUTE 319, *supra* note 286, at 12; FINAL REPORT, *supra* note 341, at 6.

343. MINUTE 323, *supra* note 286, at 15–18.

344. *Id.* at 16.

345. *Id.* at 16–17, 22.

346. Endangered Species Act, 16 U.S.C. §§ 1531-1544 (2019); Grand Canyon Protection Act of 1992, Pub. L. No. 102-575, § 1802(a), 106 Stat. 4669 [hereinafter GCPA].

(“Upper Basin Program”),³⁴⁷ (2) the San Juan River Basin Recovery Implementation Program (“San Juan Program”),³⁴⁸ and (3) the Lower Colorado River Multi-Species Conservation Program (“Lower Colorado River Program”).³⁴⁹ Extending from the latter statute, in turn, is the Glen Canyon Dam Adaptive Management Program (GCDAMP).³⁵⁰

The dual orientation of these programs is, respectfully, a head trip. Consider the Upper Basin Program’s purpose for illustration: “[T]o recover endangered fish in the Upper Colorado River Basin while water development proceeds in accordance with federal and state laws and interstate compacts.”³⁵¹ The San Juan and Lower Colorado River programs are similarly driven by mixed recovery-development mandates.³⁵² Although anchored in a different statute, the GCDAMP exists in a confined institutional space as well. Any recommendations for Glen Canyon Dam’s operation offered to the Secretary of the Interior must heed two congressional commands. The Secretary must operate the dam “in such a manner as to protect, mitigate adverse impacts to, and improve the values for which Grand Canyon National Park and Glen Canyon National Recreation Area were established.”³⁵³ Yet the Secretary must fulfill that mandate “in a manner fully consistent with and subject to” the pre-existing swath of laws governing “allocation, appropriation, development, and exportation of the waters of the Colorado River Basin”—Colorado River Compact, U.S.-Mexico Treaty, Upper Basin Compact, *Arizona v. California* decree, etc.³⁵⁴ What stories are we telling ourselves in this

347. *General Information*, UPPER COLORADO RIVER ENDANGERED FISH RECOVERY PROGRAM, <https://coloradoriverrecovery.org/general-information/general-information.html> (last visited April 25, 2021).

348. *Welcome*, SAN JUAN RIVER BASIN RECOVERY IMPLEMENTATION PROGRAM, <https://www.fws.gov/southwest/sjrip/index.cfm> (last visited April 25, 2021).

349. *General Program*, LOWER COLORADO RIVER MULTI-SPECIES CONSERVATION PROGRAM, https://www.lcrmscp.gov/general_program.html (last visited April 25, 2021).

350. *Glen Canyon Dam Adaptive Management Program*, BUREAU OF RECLAMATION, <https://www.usbr.gov/uc/progact/amp/index.html> [hereinafter GCDAMP] (last visited April 25, 2021).

351. *About the Upper Colorado River Endangered Fish Recovery Program*, UPPER COLORADO RIVER ENDANGERED FISH PROGRAM, <https://coloradoriverrecovery.org/general-information/about.html> [hereinafter *About*] (last visited April 25, 2021).

352. *See Welcome*, *supra* note 348 (“The SJRIP was established to recover the Colorado pikeminnow and the razorback sucker while allowing water development and management activities to continue in the San Juan River Basin.”); *General Program*, *supra* note 349 (describing Lower Colorado River Program as “work[ing] toward the recovery of species currently listed under the [ESA],” “reduc[ing] the likelihood of additional species listings,” “accommodat[ing] current water diversions and power production,” and “optimiz[ing] opportunities for future water and power development by providing ESA compliance.”).

353. GCPA, *supra* note 346, at § 1802(a).

354. *Id.* § 1802(b).

space? No doubt the prospect of irreconcilability is heavy.³⁵⁵ Are we avoiding that truth?

Despite their dual orientation, one unmistakable thing about these programs is their place within the collaborative trend in Colorado River governance. For context, they came into being in 1988 (Upper Basin Program),³⁵⁶ 1992 (San Juan Program),³⁵⁷ 1997 (GCDAMP),³⁵⁸ and 2005 (Lower Colorado River Program).³⁵⁹ Their structures vary in scope and composition but uniformly take multi-stakeholder collaborative forms. The most extensive is the Lower Colorado River Program, which encompasses in its Steering Committee fifty-seven entities, including “state and Federal agencies, water and power users, municipalities, Native American tribes, conservation organizations, and other interested parties.”³⁶⁰ The other programs are smaller in scale yet involve similar stakeholder representation.³⁶¹ In total, a dozen tribal sovereigns collaborate in one or more of the programs.³⁶² Whether their mixed mandates are indeed capable of reconciliation—and what specific actions should be taken to that end—are matters entrusted to the representatives of those Native communities alongside their collaborators.

2. Tribal Water Rights

An adjacent area of collaborative Colorado River governance springs directly from *Arizona v. California*. Recall how *Winters* established the existence of Indian reserved rights, and how *Arizona v. California* affirmed that existence in the

355. The most thoughtful, exhaustive source on the efficacy of these programs is ADLER, *supra* note 15. Also notable is Joseph M. Feller, *Collaborative Management of Glen Canyon Dam: The Elevation of Social Engineering over Law*, 8 NEV. L.J. 896 (2008).

356. *About*, *supra* note 351.

357. U.S. FISH & WILDLIFE SERV., ASSESSMENT AND REVIEW OF THE SAN JUAN RIVER BASIN RECOVERY IMPLEMENTATION PROGRAM’S PROGRESS TOWARD RECOVERY (2018).

358. GCDAMP, *supra* note 350.

359. *History*, LOWER COLORADO RIVER MULTI-SPECIES CONSERVATION PROGRAM, <https://www.lcrmscp.gov/history.html> (last visited April 25, 2021).

360. *General Information*, *supra* note 347.

361. *About*, *supra* note 351; *Program Partners*, SAN JUAN RIVER BASIN RECOVERY IMPLEMENTATION PROGRAM, https://www.fws.gov/southwest/sjrip/GB_PP.cfm (last visited April 25, 2021); *Glen Canyon Dam, Adaptive Management Program, Adaptive Management Work Group*, BUREAU OF RECLAMATION, <https://www.usbr.gov/uc/progact/amp/amwg.html> (last visited April 25, 2021) [hereinafter *Work Group*].

362. No tribal sovereigns participate in the Upper Basin Program. *General Information*, *supra* note 347. The Jicarilla Apache Nation, Navajo Nation, Southern Ute Indian Tribe, and Ute Mountain Ute Indian Tribe participate in the San Juan Program. *Program Partners*, *supra* note 361. The Hualapai Tribe, Hopi Tribe, Navajo Nation, Pueblo of Zuni, Southern Paiute Consortium (Kaibab Band of Paiute Indians and Paiute Indian Tribe of Utah), and San Juan Southern Paiute Tribe are members of the GCDAMP’s Adaptive Management Work Group. *Work Group*, *supra* note 361; *Southern Paiute Consortium*, KAIBAB BAND OF PAIUTES, <https://www.kaibabpaiute-nsn.gov/SPC.html> (last visited April 25, 2021). The Hualapai Tribe, Colorado River Indian Tribes, and Chemehuevi Tribe are members of the Lower Colorado River Program’s Steering Committee. *Steering Committee*, LOWER COLORADO RIVER MULTI-SPECIES CONSERVATION PROGRAM, https://www.lcrmscp.gov/steer_committee/governance.html (last visited April 25, 2021).

Colorado River Basin, as well as announced the PIA quantification standard.³⁶³ As mentioned earlier, the Supreme Court applied these holdings along the Lower Colorado River to recognize and to quantify the reserved rights of five tribes with reservations adjacent to the mainstem.³⁶⁴ But what about the twenty-five basin tribes whose reserved rights weren't adjudicated in *Arizona v. California*? How should their water rights be addressed, and what should be understood about them (as well as the adjudicated rights) at this time, particularly given the basinwide supply-demand imbalance? Two lines of collaboration stem from these questions.

Tribal water rights settlements are an initial line. *Arizona v. California* illustrates adjudication as an adversarial path for addressing Indian reserved rights. Colorado River Basin tribes (and others) who walk it may “win the battle but lose the war” as it were. They may succeed in gaining recognition and quantification of their reserved rights in a judicial decree—securing “paper water”—but nonetheless be stranded without funding and infrastructure to translate the “paper water” into “wet water” within their communities, not to mention being encumbered by hefty legal bills and potential carnage to their relationships with other litigants.³⁶⁵ While it is not utopic, negotiation exists as an alternative, cooperative path for avoiding these drawbacks.³⁶⁶ It's been the preferred path for basin tribes in *Arizona v. California's* wake,³⁶⁷ and the same goes for their trustee—the federal government—particularly since 1990.³⁶⁸

A total of thirty-six tribal water rights settlements have been formed in the United States—a trend whose genesis can be traced to the Colorado River Basin with the Ak-Chin Indian Water Rights Settlement Act in 1978.³⁶⁹ Fourteen additional settlements have been forged by basin tribes since then,³⁷⁰ and two pending

363. *Winters v. United States*, 207 U.S. 564, 576–77 (1908); *Arizona v. California*, 373 U.S. 546, 600–01 (1963).

364. *Arizona v. California*, 547 U.S. 150, 157–58 (2006).

365. See, e.g., CONGRESSIONAL RESEARCH SERVICE, INDIAN WATER RIGHTS SETTLEMENTS 2 (2020), <https://crsreports.congress.gov/product/pdf/R/R44148> [hereinafter CRS REPORT].

366. For a thoughtful study of negotiated settlements as an alternative to adjudications, see DANIEL MCCOOL, NATIVE WATERS: CONTEMPORARY INDIAN WATER SETTLEMENTS AND THE SECOND TREATY ERA (2002).

367. To be clear, adjudications may prompt negotiated settlements. CRS REPORT, *supra* note 365, at 3.

368. *Id.* at 1–3. U.S. Dept. of the Interior, Criteria and Procedures for the Participation of the Federal Government in Negotiations for the Settlement of Indian Water Rights Claims, 55 Fed. Reg. 9223 (Mar. 12, 1990) (“It is the policy of this Administration . . . that disputes regarding Indian water rights should be resolved through negotiated settlements rather than litigation.”), https://www.doi.gov/sites/doi.opengov.ibmcloud.com/files/uploads/1990-03-12_Criteria%20%26%20Procedures%20IWR_C%26P.pdf.

369. CRS REPORT, *supra* note 365, at 6–8.

370. These settlements include the Southern Arizona Water Rights Settlement Act (1982); Salt River Pima-Maricopa Indian Community Water Rights Settlement Act (1988); Fort McDowell Indian

settlements involving basin tribes are currently in Congress.³⁷¹ How these settlements are composed varies by instrument. They differ in terms of the amounts of water use authorized; types of water sources from which tribal water rights will be fulfilled (*e.g.*, surface water versus groundwater); types of water uses in which tribes can engage (*e.g.*, domestic, irrigation, instream flows); permissibility of off-reservation water marketing; and funding sources and cost-share requirements.³⁷² What these features look like depends upon context—or, put differently, relationships. And that circles back to the core point. Negotiated settlements touch on interests, often essential values and aspirations, held by a host of parties: basin tribes; diverse, sometimes conflicting federal agencies; basin-state and local water resource agencies; non-Indian water users; environmental organizations, etc.³⁷³ Despite these parties' diverse interests—and how they shape particular negotiated settlements—the takeaway is simply that the settlements trend since the late 1970s shows a willingness to seek common ground through cooperation. That's a different angle on dispute resolution than *Arizona v. California*. And it is a defining thread in the history of Colorado River governance.

A parallel line of developments has accompanied the settlements trend, too. The heightened imbalance in basinwide water supplies and demands over the past two decades has correlated with a heightened interest in the status of tribal water rights across the community of communities. How many basin tribes' water rights have not yet been recognized and quantified through negotiated settlements or adjudications? To what extent are basin tribes whose water rights have been recognized and quantified currently utilizing those rights? What are basin tribes' plans for future water development? These questions speak to a fitting metaphor: tribal water rights as a post-*Arizona v. California* "cloud" hovering over the Colorado River Basin.³⁷⁴ It arguably looms larger than ever because of the supply-demand imbalance.

Yet again, though, collaboration is being used for adaptation—specifically, for gaining a better understanding of basin tribes' water rights as informed by the questions above.

Community Water Rights Settlement Act (1990); Jicarilla Apache Tribe Water Rights Settlement Act (1992); San Carlos Apache Tribe Water Rights Settlement Act (1992); Ute Indian Rights Settlement Act (1992); Yavapai-Prescott Indian Tribe Water Rights Settlement Act (1994); Shivwits Band of the Paiute Indian Tribe of Utah Water Rights Settlement Act (2000); Zuni Indian Tribe Water Rights Settlement Act (2003); Arizona Water Settlements Act (2004); Northwestern New Mexico Rural Water Projects Act (2009); White Mountain Apache Tribe Water Rights Quantification Act (2010); Bill Williams River Water Rights Settlement Act (2014). *Id.* at 6–8.

371. These settlements are the Navajo Utah Water Rights Settlement Act and the Hualapai Tribe Water Rights Settlement Act. *Id.* at 18–19.

372. *Id.* at 6–8, 11–14, 16.

373. BONNIE G. COLBY, JOHN E. THORSON & SARAH BRITTON, NEGOTIATING TRIBAL WATER RIGHTS: FULFILLING PROMISES IN THE ARID WEST 31–38 (2005).

374. See generally Amy Cordalis & Daniel Cordalis, *Indian Water Rights: How Arizona v. California Left an Unwanted Cloud over the Colorado River Basin*, 5 ARIZ. J. ENVTL. L. & POL'Y 333 (2014).

Partly fitting this bill is the Bureau of Reclamation's Colorado River Basin Water Supply and Demand Study (Basin Study) completed in 2012.³⁷⁵ Projecting a potential basinwide supply-demand imbalance of 3.2 million acre-feet (maf) annually by 2060,³⁷⁶ the study was collaborative in several respects, including its crowdsourcing of options for addressing the imbalance.³⁷⁷ Content on tribal water rights appeared in the study, including (1) a determination that "quantified tribal diversion rights comprise about 2.9 maf in the Basin," and (2) an acknowledgment that a dozen tribes have unquantified rights and claims for which future demand "will be a factor impacting Basin-wide water availability."³⁷⁸ Of greatest relevance here, however, is the fact that the study was a mixed bag from the standpoint of relationships—federal-tribal relations in particular:

At the outset of the Study, the [tribes of the Ten Tribes Partnership] were not represented on the steering committee established for the Study; membership was limited to representatives of the Bureau and the Basin States. Nor did the Ten Tribes feel that they had much of a role in it because they were relegated to participation on sub-teams that were used to develop technical data for the Study. Because it

375. COLORADO RIVER BASIN WATER SUPPLY AND DEMAND STUDY, BUREAU OF RECLAMATION, <https://www.usbr.gov/lc/region/programs/crbstudy/finalreport/index.html> (last updated Dec. 11, 2018).

376. BUREAU OF RECLAMATION, COLORADO RIVER BASIN WATER SUPPLY AND DEMAND STUDY, STUDY REPORT SR-34 to -35 (2012), https://www.usbr.gov/lc/region/programs/crbstudy/finalreport/Study%20Report/CRBS_Study_Report_FINAL.pdf [hereinafter STUDY REPORT].

377. This crowdsourcing is apparent in BUREAU OF RECLAMATION, COLORADO RIVER BASIN WATER SUPPLY AND DEMAND STUDY, TECHNICAL REPORT F—DEVELOPMENT OF OPTIONS AND STRATEGIES (2012), https://www.usbr.gov/lc/region/programs/crbstudy/finalreport/Technical%20Report%20F%20-%20Development%20of%20Options%20and%20Strategies/TR-F_Development_of_Ops&Strats_FINAL.pdf [hereinafter TECHNICAL REPORT F]; BUREAU OF RECLAMATION, COLORADO RIVER BASIN WATER SUPPLY AND DEMAND STUDY, TECHNICAL REPORT G—SYSTEM RELIABILITY ANALYSIS AND EVALUATION OF OPTIONS AND STRATEGIES (2012), https://www.usbr.gov/lc/region/programs/crbstudy/finalreport/Technical%20Report%20G%20-%20System%20Reliability%20Analysis%20and%20Evaluation%20of%20Options%20and%20Strategies/TR-G_System_Reliability_Analysis_FINAL.pdf [hereinafter TECHNICAL REPORT G].

378. BUREAU OF RECLAMATION, COLORADO RIVER BASIN WATER SUPPLY AND DEMAND STUDY, TECHNICAL REPORT C—WATER DEMAND ASSESSMENT C-38 (2012), https://www.usbr.gov/lc/region/programs/crbstudy/finalreport/Technical%20Report%20C%20-%20Water%20Demand%20Assessment/TR-C-Water_Demand_Assessment_FINAL.pdf [hereinafter TECHNICAL REPORT C]. The Basin Study identified the following tribes as holding unquantified rights and claims: Navajo Nation, Ute Mountain Ute Tribe, Havasupai Tribe, Hopi Tribe, Hualapai Tribe, Kaibab Band of Paiute Indians, Pascua Yaqui Tribe, San Carlos Apache Tribe, San Juan Southern Paiute Tribe, Tohono O'odham Nation, Tonto Apache Tribe, and Yavapai-Apache Nation. *See also* BUREAU OF RECLAMATION, COLORADO RIVER BASIN WATER SUPPLY AND DEMAND STUDY, TECHNICAL REPORT C—WATER DEMAND ASSESSMENT, APPENDIX C9, TRIBAL WATER DEMAND SCENARIO QUANTIFICATION (2012), https://www.usbr.gov/lc/region/programs/crbstudy/finalreport/Technical%20Report%20C%20-%20Water%20Demand%20Assessment/TR-C_Appendix9_FINAL.pdf.

appears that the study was to be a decision document which could significantly adversely impact tribal water rights and the tribal usage of water in the future[,] exclusion from the steering committee became a matter of great concern of the Partnership. This shortcoming and other concerns were raised with the Bureau of Reclamation reminding the Bureau of the United States' trust responsibility to them in the protection of their water and of the tribes' sovereign status in control of their water.³⁷⁹

In short, the study got off to a rocky start. To its credit, the Bureau responded by engaging in outreach with basin tribes, which yielded the tribal water rights content above.³⁸⁰ What was clear from the landmark project, though, was the need for further collaboration.³⁸¹

Enter the Colorado River Basin Ten Tribes Partnership Tribal Water Study (Tribal Water Study).³⁸² Completed six years after the Basin Study, in 2018, the Tribal Water Study's most salient feature for present purposes yet again concerns relationships—namely, the study's joint preparation by the Bureau of Reclamation and the Ten Tribes Partnership. As described by Reclamation Commission Brenda Burman in her foreword:

Recognizing the importance of furthering the understanding of tribal water (both currently and in the decades ahead), the Bureau of Reclamation and the Ten Tribes Partnership collaborated in this Study to document Partnership Tribes' water use and potential future water development to better facilitate planning and decision-making throughout the Basin. . . . The partnerships forged and strengthened

379. *Colorado River Basin Tribes Partnership, Hearing Before the Subcomm. on Water and Power of the Comm. on Energy and Natural Resources United States Senate*, 113th Cong. 1st Sess. 20 (July 16, 2013) (testimony of T. Darryl Vigil, Chairman), <https://www.govinfo.gov/content/pkg/CHRG-113shrg86774/pdf/CHRG-113shrg86774.pdf> [hereinafter Vigil Testimony]. The Ten Tribes Partnership consists of the Cocopah Indian Tribe, Chemehuevi Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Fort Yuma Quechan Indian Tribe, Jicarilla Apache Nation, Navajo Nation, Southern Ute Indian Tribe, Ute Indian Tribe of the Uintah and Ouray Reservation, and Ute Mountain Ute Indian Tribe. *Tribes of the Colorado River Basin*, TEN TRIBES PARTNERSHIP, <https://tentribespartnership.org/tribes-of-the-colorado-river-basin/> (last visited April 25, 2021). Formed in 1992, the Ten Tribes Partnership's goal is "to increase the influence of tribes in Colorado River management and provide support for the protection and use of tribal water resources." *Keepers of the River*, TEN TRIBES PARTNERSHIP, <https://tentribespartnership.org/> (last visited April 25, 2021).

380. Vigil Testimony, *supra* note 379, at 20–21.

381. COLORADO RIVER BASIN TRIBES PARTNERSHIP & U.S. DEPT. OF INTERIOR, AGREEMENT REGARDING IMPORTANCE OF THE COLORADO RIVER BASIN TRIBAL WATER STUDY AS IDENTIFIED IN THE COLORADO RIVER BASIN WATER SUPPLY AND DEMAND STUDY (2013), <https://www.usbr.gov/lc/region/programs/crbstudy/agreement.pdf> [hereinafter TRIBAL WATER STUDY AGREEMENT].

382. TRIBAL WATER STUDY, *supra* note 19.

during this Study will prove to be critical as we collaboratively address the significant challenges ahead.³⁸³

This sentiment echoed an accompanying foreword by the Ten Tribes Partnership:

We hope this Report informs, resolves some uncertainty about how tribes perceive the future for their water uses, and establishes a baseline for discussions and development of relationships among tribes, states, the federal government, water managers, and water users throughout the Basin.

No doubt the study did that baseline job. Like the Basin Study, the Tribal Water Study is extensive, but one key figure connecting the documents deserves a sober look: “Partnership Tribes have reserved water rights, including unresolved claims, to divert nearly 2.8 million acre-feet per year (AFY) of water from the Colorado River and its tributaries.”³⁸⁴ To reiterate, accounting for twenty-eight basin tribes (versus just the Partnership Tribes), the Basin Study calculated “quantified tribal diversion rights comprise about 2.9 maf in the Basin,” and also identified a dozen tribes with “unquantified rights and claims.”³⁸⁵ That’s *huge*—a cloud indeed. And, to be clear, the Tribal Water Study painted a clear picture of what the future holds. Basin tribes intend to have outstanding reserved rights claims resolved.³⁸⁶ They plan to secure water infrastructure projects promised to them, to maximize on-reservation use of water, and to pursue off-reservation transfers.³⁸⁷ Further, as an overarching priority, they aim to ensure “[t]he federal government firmly asserts and exercises its trust responsibility to protect the [tribes’] reserved water rights in all its management actions related to the Colorado River.”³⁸⁸ Negotiation and implementation of the new management framework are precisely such actions.

3. Allocation Framework

Before turning to the new management framework in earnest, one final strand of collaborative Colorado River governance must be brought to light. It, too, involves deep concerns about equity and climate change, albeit from a slightly different angle than the collaborations over tribal water rights. A seemingly basic question drives this final strand: How should the Law of the River’s allocation framework adapt to climate change? The past two decades have

383. *Id.* at i.

384. *Id.* at 5.11-1.

385. TECHNICAL REPORT C, *supra* note 378, at C-38, C-40.

386. TRIBAL WATER STUDY, *supra* note 19, at appx. 1B-1.

387. *Id.*

388. *Id.*

seen a wide range of answers to this question, internationally and domestically, all of which reveal incremental (versus transformative) adaptation. While the substance of these novel measures is important, even more so are their collaborative origins.

Understanding things at the international level requires circling back to Minutes 319 and 323. Not to touch on Colorado River Delta restoration this go around,³⁸⁹ but rather to consider an equally timely, compelling topic: implementation of the international apportionment in the face of climate change. The U.S.-Mexico Treaty itself deserves brief mention in this vein. It includes an “escape clause” in Article 10(b) ostensibly allowing the United States to reduce annual treaty flow deliveries to Mexico in the case of “extraordinary drought” or “serious accident to the irrigation system in the United States.”³⁹⁰ Unfortunately, however, problems with the clause’s text make it difficult if not impossible to apply on the ground.³⁹¹ “All told, it seems extremely unlikely that the United States can, as a practical matter, ever expect to rely on article 10 to reduce deliveries to Mexico.”³⁹² A natural question thus arises: how exactly should the treaty be implemented given climate change’s impacts on the basin’s hydrology?

Minutes 319 and 323 brought about some creative, collaborative solutions—innovations that will stay in effect until December 31, 2026 under the latter minute.³⁹³

Shortage sharing is one angle. With its adoption in 2012, Minute 319 put into place a shortage-sharing regime for treaty flows, hinging annual deliveries on Lake Mead’s elevation—specifically, on elevation tiers with graduated delivery reductions that tracked domestic counterparts established in 2007 by the Colorado River Interim Guidelines for Lower Basin Shortages and Coordinated Operations for Lake Powell and Lake Mead (Interim Guidelines).³⁹⁴ Five years later, in 2017, Minute 323 picked up this thread. Recognizing “it is in their mutual interests to continue to proactively address the potential for unprecedented reductions on the Colorado River,” the United States and Mexico not only agreed to an analogue to Minute 319’s shortage-sharing regime, but also mapped out a binational water scarcity contingency plan.³⁹⁵ It was framed around updated elevation tiers for Lake Mead mirroring those of a domestic Lower Basin Drought

389. Delta restoration is discussed *supra* Part III.B.1.

390. Treaty, *supra* note 27, at Art. 10(b).

391. Robison, *supra* note 253, at 503–05.

392. Meyers & Noble, *supra* note 273, at 413.

393. MINUTE 323, *supra* note 286, at 22. Although our focus here is on Minutes 319 and 323, they came on the heels of important predecessor Minutes also illustrative of the collaborative trend. *See, e.g.*, 7D REVIEW, *supra* note 29, at 7–9 (identifying cooperative elements of Minutes 316, 317, and 318).

394. MINUTE 319, *supra* note 286, at 6–7; U.S. DEP’T OF THE INTERIOR, RECORD OF DECISION, COLORADO RIVER INTERIM GUIDELINES FOR LOWER BASIN SHORTAGES AND COORDINATED OPERATIONS FOR LAKE POWELL AND LAKE MEAD (2007), <https://www.usbr.gov/lc/region/programs/strategies/RecordofDecision.pdf> [hereinafter INTERIM GUIDELINES].

395. MINUTE 323, *supra* note 286, at 3–8.

Contingency Plan in the works at the time of Minute 323's adoption.³⁹⁶ The binational plan would take effect once the domestic plan had.³⁹⁷

Another area of innovation involves what looks like international water banking, though those terms were purposefully not used in Minutes 319 or 323.³⁹⁸ The basic idea in this space is to enable Mexico to store unused treaty flows in Lake Mead—U.S. infrastructure—for delivery at a later date. Minute 319 provided for this arrangement in two circumstances: (1) where Mexico was unable to use treaty flows due to infrastructure repairs from a 2010 earthquake in Mexicali, and (2) where Mexico chose to rely on water yielded from conservation projects (e.g., canal lining) or augmentation projects (e.g., desalination plants) in lieu of treaty flows.³⁹⁹ As with the shortage-sharing regime, Minute 323 carried this cooperation forward. Unified under a concept dubbed “Mexico’s Water Reserve,” Minute 323 authorizes Mexico to store unused treaty flows in Lake Mead in both circumstances just noted, and also establishes a replenishable “Revolving Account for Mexican waters in storage in the United States.”⁴⁰⁰

This collaboration over the international apportionment hasn’t occurred in a vacuum, but rather in conversation with domestic developments. Climate change has spurred the invention and implementation of a host of measures within the U.S. portion of the basin during the past two decades. For sake of brevity, two instruments make the shortlist here: the 2007 Interim Guidelines and the 2019 Drought Contingency Plans.⁴⁰¹

Climate change hit reservoirs and relationships hard when the megadrought set on in the Colorado River Basin in 2000.⁴⁰² A few years into the ordeal, “tensions among the Basin States brought the basin closer to multi-state and inter-basin litigation than perhaps any time since the adoption of the [Colorado

396. *Id.* at 6–8.

397. *Id.* at 7.

398. Robison, *supra* note 253, at 507.

399. MINUTE 319, *supra* note 286, at 4, 7–10.

400. MINUTE 323, *supra* note 286, at 8–9. Treaty flows stored in the first circumstance are called “Emergency Storage,” while treaty flows stored in the second circumstance are called “Intentionally Created Mexican Allocation” (ICMA). *Id.* at 8.

401. INTERIM GUIDELINES, *supra* note 394. Several documents constitute the Upper Basin and Lower Basin drought contingency plans. *Colorado River Basin Drought Contingency Plans*, BUREAU OF RECLAMATION, <https://www.usbr.gov/dcp/finaldocs.html> (last visited April 25, 2021). The collaborative trend in Colorado River governance can also be gleaned from various complementary domestic measures commenced in 2014: a Pilot System Conservation Program, a Memorandum of Understanding for Pilot Drought Response Actions, and a host of conservation agreements, including several involving basin tribes. 7D REVIEW, *supra* note 29, at 9, 37 tbl. 4.

402. 7D REVIEW, *supra* note 29, at 2 (“During the years 2000 through 2004, the Colorado River Basin . . . experienced the lowest five-year average annual hydrology in the observed record, reducing combined storage in Lake Powell and Lake Mead from 55.7 million acre-feet (maf) (approximately 94 percent of capacity) to 29.7 maf (approximately 52 percent of capacity).”). *See also id.* at 6 (“From October 1, 1999 through September 30, 2007, storage in Colorado River reservoirs fell from 55.8 maf (approximately 94 percent of capacity) to 32.1 maf (approximately 54 percent of capacity), and was as low as 29.7 maf (approximately 52 percent of capacity) in 2004.”).

River Compact]” in 1922.⁴⁰³ How should the flow obligations central to the compact’s apportionment be implemented—particularly the obligation to contribute treaty flows to Mexico—in this heated environment?⁴⁰⁴ The Upper Basin and Lower Basin states did not see eye to eye.⁴⁰⁵ Thankfully, though, they chose not to stage a twenty-first-century reenactment of *Arizona v. California*, instead seeking resolution of their differences by participating in a process initiated by Secretary of the Interior Gale Norton under the National Environmental Policy Act (NEPA).⁴⁰⁶ That process was not a panacea—including with respect to its treatment of basin tribes’ and their water rights—but nonetheless showed earnest efforts by the Bureau of Reclamation to afford opportunities for participation across the basin’s community of communities.⁴⁰⁷ Two years later, in 2007, the process bore fruit.⁴⁰⁸

The Interim Guidelines contain a host of collaborative pieces. As is the case at the international level, our focus is on the broad categories of shortage sharing and water banking, though dispute resolution is also discussed in relation to a complementary agreement.

With respect to shortage sharing, what the Interim Guidelines essentially did is find mutually acceptable ways to implement the apportionments of the Colorado River Compact and the *Arizona v. California* decree on an interim basis in response to climate change.⁴⁰⁹ Reservoir operating regimes were the tool employed for this purpose.⁴¹⁰

Relevant to the Colorado River Compact’s apportionment, the Interim Guidelines adopted a coordinated operating regime for Lake Powell and Lake Mead that serves to implement the flow obligations just described as having pushed the basin states toward an *Arizona v. California* repeat upon the megadrought’s onset.⁴¹¹ In lieu of U.S. Supreme Court litigation aimed at interpreting those flow obligations (and related compact terms), the coordinated operating regime prescribes annual releases from Lake Powell and Lake Mead tailored to the reservoirs’ respective elevations.⁴¹² The collaborative nature of the Interim Guidelines’ formation finds expression in the professed goal for the coordinated operating regime: “to avoid curtailment of uses in the Upper Basin,

403. INTERIM GUIDELINES, *supra* note 394, at 11.

404. See Compact, *supra* note 24, at Arts. III(c)–(d).

405. See, e.g., Robison, *supra* note 253, at 517–19.

406. Robison, *supra* note 253, at 519.

407. Concerns about the treatment of basin tribes and their water rights are acknowledged in 7D REVIEW, *supra* note 29, at 12, 14.

408. INTERIM GUIDELINES, *supra* note 394.

409. These apportionments appear in Article III of the Compact and Article II(B) of the Decree. Compact, *supra* note 24, at Art. III; *Arizona v. California*, 547 U.S. 150, 155–56 (2006).

410. Compact, *supra* note 24.

411. INTERIM GUIDELINES, *supra* note 394, at 49–53.

412. *Id.*

minimize shortages in the Lower Basin[,] and not adversely affect the yield for development available in the Upper Basin.”⁴¹³

As for the *Arizona v. California* decree, the Interim Guidelines provided much-needed specificity about how its Lower Colorado River apportionment would be implemented in the event of a shortage declaration by the Secretary of the Interior (again, the federal watermaster).⁴¹⁴ Hitched to Lake Mead’s elevation—*i.e.*, elevation tiers with graduated delivery reductions—it was this domestic reservoir operating regime that shaped the international counterparts in Minutes 319 and 323 mentioned above.⁴¹⁵ Notably, however, California was not called upon to do *any* sharing under the regime—something time would remedy.⁴¹⁶

In addition to these shortage-sharing measures, the Interim Guidelines also turned Lake Mead into an interstate water bank, though that terminology was not used in the Record of Decision.⁴¹⁷ Rather, the mechanism being referenced is the Intentionally Created Surplus (ICS) program.⁴¹⁸ It was designed to promote conservation and flexibility in the use of Lower Colorado River water, to bolster storage in Lake Mead and Lake Powell, and to avoid or minimize the impacts of a secretarial shortage declaration.⁴¹⁹ Parties in the Lower Basin states entitled to use Lower Colorado River water (“contractors”) are able to generate ICS through water conservation (“Extraordinary Conservation ICS” or “Tributary Conservation ICS”), capital contributions to water system efficiency projects (“System Efficiency ICS”), and imports of non-Colorado River system water into the mainstem (“Imported ICS”).⁴²⁰ Once a contractor has created ICS in one of these forms, the contractor can later request the Secretary of the Interior to deliver the ICS, so long as certain conditions are met—*e.g.*, the Secretary has determined an “ICS Surplus Condition” exists within the meaning of the Interim Guidelines.⁴²¹ From the perspective of collaboration, it is critical to note that the ICS program rests on a forbearance agreement entered into by Lower Basin contractors.⁴²² But for this forbearance agreement, the ICS program could *not* have been stood up, as the

413. *Id.* at 49.

414. *See supra* Part III.A.4; INTERIM GUIDELINES, *supra* note 394, at 36–37.

415. *See supra* Part III.A.4; MINUTE 323, *supra* note 286, at 3–6; MINUTE 319, *supra* note 286, at 6–7.

416. INTERIM GUIDELINES, *supra* note 394, at 36–37.

417. *Id.* at 38–43.

418. The ICS program was preceded by an interstate water banking program adopted by federal regulations in 1999 focusing on offstream storage of Lower Colorado River water—*i.e.*, storage in groundwater aquifers or reservoirs off the mainstem. 43 C.F.R. Pt. 414 (2007). In addition to the ICS program, the Interim Guidelines also established a Developed Shortage Supply (DSS) program that has not been utilized up to this point, as a secretarial shortage declaration has not yet been made. INTERIM GUIDELINES, *supra* note 394, at 44–46.

419. INTERIM GUIDELINES, *supra* note 394, at 27.

420. *Id.* at 38–39.

421. *Id.* at 42–43.

422. *Id.* at 24–25.

Secretary's deliveries of surplus water would be bound by percentage-based allocations prescribed by the *Arizona v. California* decree.⁴²³

Beyond the four corners of the Interim Guidelines, a complementary agreement joined by the basin states (Basin States' Agreement) should also be highlighted vis-à-vis the collaborative trend.⁴²⁴ The agreement addresses dispute resolution—a subject whose importance cannot be overstated given the basinwide relationship stressor that is climate change.⁴²⁵ The consensus reached by the basin states in the document squarely rebukes *Arizona v. California*:

The Parties recognize that judicial or administrative proceedings are not preferred alternatives to the resolution of claims or controversies concerning the law of the river. In furtherance of this Agreement, the Parties desire to avoid judicial or administrative proceedings, and agree to pursue a consultative approach to the resolution of any claim or controversy.⁴²⁶

Consultation is required before any judicial or administrative proceeding can be initiated over the Colorado River Compact's flow obligations or related parts of the Law of the River.⁴²⁷

In terms of timeline, a couple things about the Interim Guidelines and the Basin States' Agreement are crucial to flag. First, both are temporary instruments.⁴²⁸ December 31, 2025 is the Interim Guidelines' general expiration date.⁴²⁹ That's when the shortage sharing schemes (*i.e.*, reservoir operating regimes) are slated to expire, as well as most parts of the ICS program.⁴³⁰ The dispute resolution provision (*i.e.*, mandatory consultation requirement) of the Basin States' Agreement will survive an additional five years.⁴³¹ Second, the Interim Guidelines included an important measure that would be triggered leading up to the interim period's close: "Beginning no later than December 31, 2020, the Secretary [of the Interior] shall initiate a formal review for purposes of evaluating the effectiveness of these Guidelines."⁴³² The colloquial term for this formal review is the "7.D. Review," and much more is said about it below.⁴³³

423. *Id.* at 27 (Article II(B)(2) of the decree contains the percentage-based allocations); *Arizona v. California*, 547 U.S. 150, 155 (2006).

424. *Agreement Concerning Colorado River Management and Operations* (Apr. 23, 2007), <https://www.usbr.gov/lc/region/programs/strategies/FEIS/AppJ.pdf> [hereinafter BASIN STATES' AGREEMENT]. This agreement appears as attachment A of the linked document.

425. *Id.* at 10.

426. *Id.*

427. *Id.*

428. *Id.* at 13; INTERIM GUIDELINES, *supra* note 394, at 57–58.

429. INTERIM GUIDELINES, *supra* note 394, at 57–58.

430. *Id.*

431. BASIN STATES' AGREEMENT, *supra* note 424, at 10, 13.

432. INTERIM GUIDELINES, *supra* note 394, at 56.

433. 7D REVIEW, *supra* note 29.

Plugging the Drought Contingency Plans into this storyline, 2012 and 2013 witnessed the lowest two-year runoff period on record in the Colorado River Basin, a turning point in the megadrought that prompted the basin states and Bureau of Reclamation to begin work on these plans.⁴³⁴ The process spanned several years.⁴³⁵ Initially scheduled for completion in December 2018, the basin states ultimately submitted the plans to Congress for approval in March 2019,⁴³⁶ with passage of the Colorado River Drought Contingency Plan Authorization Act following one month later.⁴³⁷ A massive collaborative effort was required to get there. As Reclamation Commissioner Brenda Burman testified before Congress: “Interior is proud to have worked collaboratively with the States, tribes, non-governmental organizations and other Basin stakeholders on the DCPs. We look forward to continuing our work with the States, tribes, NGOs, key water districts, and Mexico on implementation of the DCPs once they become effective.”⁴³⁸ And, indeed, basin tribes had been instrumental in making the plans a reality. Perhaps most notable is engagement by the Colorado River Indian Tribes and the Gila River Indian Community in the Lower Basin on the Arizona Drought Contingency Plan Steering Committee—though the tribes had *not* been invited to participate at the start of the process.⁴³⁹ At the end of the day, with a signing ceremony atop Hoover Dam on May 20, 2019, the Drought Contingency Plans went into effect, marking “an historic accomplishment” in the basin.⁴⁴⁰

434. *Id.* at 7–8.

435. *See id.* at 8–9.

436. *Drought Contingency Plans Basin States Transmittal Letter and Attachments from the Basin States to Congress* (Mar. 19, 2019), <https://www.usbr.gov/dcp/docs/DroughtContingencyPlansBasinStates-TransmittalLetter-508-DOI.pdf>. After the December 2018 deadline went unmet, the Department of the Interior published in the Federal Register a notice and request for input from the basin states’ governors, alluding to the prospect of unilateral federal actions to ensure water security given the megadrought. Responding to Historic Drought and Ongoing Dry Conditions in the Colorado River Basin: Request for Input, 84 Fed. Reg. 2244, 2245 (Feb. 6, 2019). The Department of the Interior rescinded this notice and request for input once the basin states had submitted the Drought Contingency Plans to Congress. *Department of the Interior Statement: March 19, 2019. Transmittal of Drought Contingency Plans by the Seven Colorado River Basin States and Key Water Districts to Congress for Implementation*, UNITED STATES DEP’T OF THE INTERIOR (Mar. 19, 2019), <https://www.usbr.gov/dcp/docs/BORTransmittal-Statement-508-DOI.pdf>.

437. Colorado River Drought Contingency Plan Authorization Act, Pub. L. No. 116-14, 133 Stat. 850 (2019).

438. Brenda Burman, *Commissioner, Bureau of Reclamation, Statement at the Energy and Natural Resources Committee, Subcommittee on Water and Power, U.S. Senate on Efforts in the Colorado River Basin on the Drought Contingency Plans* (Mar. 27, 2019), <https://www.energy.senate.gov/services/files/3EF1EAC6-51A0-44DC-8DF3-6B17A40B5A12> [hereinafter Burman Testimony].

439. MIKHAIL SUNDUST ET AL., ARIZ. STATE UNIV., *THE ARIZONA DROUGHT CONTINGENCY PLAN: A TRIBAL PERSPECTIVE*, 7–10 (Oct. 2019), https://aipi.asu.edu/sites/default/files/the_arizona_dcp_-_a_tribal_perspective.pdf.

440. Press Release, Bureau of Reclamation, Interior and States Sign Historic Drought Agreements to Protect Colorado River (May 20, 2019), <https://www.usbr.gov/newsroom/newsrelease/detail.cfm?RecordID=66103>.

Simply put, the Drought Contingency Plans are concerned with reservoir protection—*i.e.*, reducing “the likelihood of reaching critical elevation levels in Lake Powell and Lake Mead”⁴⁴¹ To this end, the plans reflect a common understanding that “additional actions beyond those contemplated in the 2007 Interim Guidelines” are necessary.⁴⁴²

The Upper Basin Drought Contingency Plan aims to maintain Lake Powell’s storage to ensure compliance with the Colorado River Compact’s flow obligations, and to sustain hydropower generation and associated revenues at Glen Canyon Dam.⁴⁴³ Directed toward these goals, the plan includes (1) a Drought Response Operations Agreement generally focused on coordinating operations at Colorado River Storage Project Act reservoirs to keep Lake Powell at a target elevation, and (2) a Demand Management Storage Agreement generally addressing the potential establishment of an Upper Basin Demand Management Program.⁴⁴⁴

As for the Lower Basin Drought Contingency Plan, it’s oriented similarly with respect to maintaining Lake Mead’s storage to avoid secretarial shortage declarations along the Lower Colorado River—as well as hydropower generation and revenues at Hoover Dam—and also outlining how shortages will be shared among the Lower Basin states.⁴⁴⁵ The Interim Guidelines’ shortage sharing regime is built out through a scheme of “DCP Contributions” and more extensive elevation tiers that contemplate California shouldering some of the shortage burden (*contra* the guidelines).⁴⁴⁶ It is this updated regime that corresponds with Minute 323’s binational water scarcity contingency plan discussed earlier.⁴⁴⁷ Lastly, the Lower Basin Drought Contingency Plan modifies the ICS program—including further

441. AGREEMENT CONCERNING COLORADO RIVER DROUGHT CONTINGENCY MANAGEMENT AND OPERATIONS, BUREAU OF RECLAMATION (May 20, 2019), <https://www.usbr.gov/dcp/docs/final/Companion-Agreement-Final.pdf> [hereinafter COMPANION AGREEMENT].

442. *Id.* See also Burman Testimony, *supra* note 438, at 2 (“Since 2007, the drought has persisted and more action . . . is needed to protect these reservoirs that are essential to our environment and economy.”). The source cited immediately before the parenthetical is where the quote is drawn from.

443. See, e.g., Burman Testimony, *supra* note 438, at 3.

444. BUREAU OF RECLAMATION, AGREEMENT FOR DROUGHT RESPONSE OPERATIONS AT THE INITIAL UNITS OF THE COLORADO RIVER STORAGE PROJECT ACT (2019), <https://www.usbr.gov/dcp/docs/final/Attachment-A1-Drought-Response%20Operations-Agreement-Final.pdf> [hereinafter DROUGHT RESPONSE OPERATIONS AGREEMENT]; BUREAU OF RECLAMATION, AGREEMENT REGARDING STORAGE AT COLORADO RIVER STORAGE PROJECT ACT RESERVOIRS UNDER AN UPPER BASIN DEMAND MANAGEMENT PROGRAM (2019), <https://www.usbr.gov/dcp/docs/final/Attachment-A2-Drought-Management-Storage-Agreement-Final.pdf> [hereinafter DEMAND MANAGEMENT STORAGE AGREEMENT]. These documents are accompanied by COMPANION AGREEMENT, *supra* note 441.

445. The plan includes BUREAU OF RECLAMATION, LOWER BASIN DROUGHT CONTINGENCY PLAN AGREEMENT (2019), <https://www.usbr.gov/dcp/docs/final/Attachment-B-LB-DCP-Agreement-Final.pdf> [hereinafter LOWER BASIN DCP]; BUREAU OF RECLAMATION, EXHIBIT 1 TO THE LOWER BASIN DROUGHT CONTINGENCY PLAN AGREEMENT (2019), <https://www.usbr.gov/dcp/docs/final/Attachment-B-Exhibit-1-LB-Drought-Operations.pdf> [hereinafter EXHIBIT 1]. Again, these documents are accompanied by COMPANION AGREEMENT, *supra* note 441.

446. EXHIBIT 1, *supra* note 445, at 2–5.

447. MINUTE 323, *supra* note 286, at 6–8.

incentivizing participation—so as to bolster Lake Mead’s status as an interstate water bank.⁴⁴⁸

While far more could be said about both Drought Contingency Plans’ content, the main point to convey again concerns relationships. Imagine how much time and effort it took to iron out the details above. Consider, too, how much more of the same it will take for the plans’ implementation. Just like the Interim Guidelines on which they rest, the plans are truly massive collaborative projects. And a final connecting thread drives this point home just a bit more. Recall the Basin States’ Agreement accompanying the Interim Guidelines.⁴⁴⁹ Its dispute-resolution provision disavows “judicial or administrative proceedings” as “preferred alternatives to the resolution of claims or controversies or controversies concerning the law of the river.”⁴⁵⁰ A consultative approach is called for instead—that is, consultation is mandated as a prerequisite to initiating any such proceedings.⁴⁵¹ Connecting this provision to the Drought Contingency Plans, the exact same approach to dispute resolution appears in those documents.⁴⁵²

Looking ahead, the Interim Guidelines’ general expiration date—again, December 31, 2025—also applies to the Drought Contingency Plans.⁴⁵³ Implementation of the plans over the next several years are scheduled to “occur while Basin State representatives . . . Tribes, NGOs, and the public, begin efforts to develop agreements on longer-term operations that would be adopted beyond 2026.”⁴⁵⁴ The plans are thus a “bridge” to the new management framework.⁴⁵⁵ Taking place in parallel has been the 7.D. Review. The Bureau of Reclamation undertook it throughout 2020, and one prevalent thread involves the topic animating this whole discussion: “increasing inclusivity of diverse stakeholders and partners” in Colorado River governance.⁴⁵⁶ “Since the adoption of the Guidelines,”

448. EXHIBIT 1, *supra* note 445, at 9–12.

449. BASIN STATES’ AGREEMENT, *supra* note 424.

450. *Id.* at 10.

451. *Id.*

452. COMPANION AGREEMENT, *supra* note 441, at 4–5; DROUGHT RESPONSE OPERATIONS AGREEMENT, *supra* note 444, at 11–12; DEMAND MANAGEMENT STORAGE AGREEMENT, *supra* note 444, at 10; LOWER BASIN DCP, *supra* note 445, at 7.

453. The general expiration date is incorporated into COMPANION AGREEMENT, *supra* note 441, at 2, 8; DROUGHT RESPONSE OPERATIONS AGREEMENT, *supra* note 444, at 10; DEMAND MANAGEMENT STORAGE AGREEMENT, *supra* note 444, at 7; see EXHIBIT 1, *supra* note 445, at 1. If an Upper Basin Demand Management Program is established, certain provisions bearing on conserved water stored in and released from Colorado River Storage Project Act units will persist until 2057. DEMAND MANAGEMENT STORAGE AGREEMENT, *supra* note 444, at 5–6. The Lower Basin Drought Contingency Plan Agreement is scheduled to terminate “on the later of (i) December 31, 2026; or (ii) the date on which all ICS Accounts and DCP ICS Accounts are reduced to zero” LOWER BASIN DCP, *supra* note 445, at 2. While the general expiration date applies to this plan’s shortage-sharing regime, nuanced expiration dates apply to the ICS provisions. EXHIBIT 1, *supra* note 445, at 13.

454. Burman Testimony, *supra* note 438.

455. *Id.*

456. 7D REVIEW, *supra* note 29, at 10.

described the Bureau, “the ongoing drought has driven Basin partners to cultivate cooperative relationships for addressing Basin-wide challenges through consensus and collaboration.”⁴⁵⁷ And past is prologue. “This expanded inclusivity will continue to forge and strengthen partnerships that will be critical as we address the significant challenges ahead.”⁴⁵⁸ It is this continued expansion that we now advocate for.

IV. NEXT-GENERATION GOVERNANCE

We can do even better in the Colorado River Basin. While the past several decades have witnessed an array of collaborative governance approaches, existing institutions need to continue evolving to better align with the full sweep of the basin’s community of communities. A key aspect of this pattern involves treating the thirty tribal sovereigns as just that—*sovereigns*—alongside the federal government and the basin states, not as a special type of stakeholder. In this spirit, the material below is woven around a vital, invigorating goal: imagination. Our aim is to envision how next-generation Colorado River governance institutions can be composed to reflect more fully the basin’s character as a community of communities—particularly, though not solely, the new management framework taking shape over the next several years. To clarify, we use the phrase “new management framework” as a reference to the collective body of domestic and international instruments negotiated between now and 2026 stemming from the general expiration of the Interim Guidelines, Drought Contingency Plans, and Minute 323.

We draw heavily on cutting-edge work by the Water & Tribes Initiative (WTI) in this exercise.⁴⁵⁹ In February 2019, WTI initiated a conversation at a basinwide workshop about designing a collaborative process to facilitate meaningful participation by tribes and other communities in developing the new management framework.⁴⁶⁰ WTI then completed more than 100 confidential interviews with tribal and other leaders in and around the basin to solicit input on process

457. *Id.* at 14.

458. *Id.*

459. The Water & Tribes Initiative is an ad hoc partnership catalyzed in 2017 to pursue two complimentary objectives: (1) enhance the capacity of tribes to advance their needs and interests with respect to water management in the Colorado River Basin, and (2) advance sustainable water management through collaborative problem-solving. *Water & Tribes Initiative*, UNIV. OF MONT., CTR. FOR NAT. RES. & ENVTL. POLICY, <https://naturalresourcespolicy.org/projects/water-tribes-colorado-river-basin/default.php> (last visited April 25, 2021). WTI is guided by a broad-based Leadership Team, does not speak for any tribe or other entity, and pursues its objectives through facilitation, policy research, and education. *Id.*

460. WATER & TRIBES INITIATIVE, TOWARD A SENSE OF THE BASIN: DESIGNING A COLLABORATIVE PROCESS TO DEVELOP THE NEXT SET OF GUIDELINES FOR THE COLORADO RIVER SYSTEM 2 (2020), <http://naturalresourcespolicy.org/docs/colorado-river-basin/basin-report-2020.pdf> [hereinafter *SENSE OF THE BASIN*].

options.⁴⁶¹ These interviewees are anonymously referred to as “basin leaders” below. WTI’s interview findings were initially presented at the Colorado River Water Users Association annual meeting in December 2019—where Reclamation Commissioner Brenda Burman encouraged attendees to reflect on past processes, to highlight lessons learned, and to explore options for the future—and the findings were discussed at greater length at a basinwide workshop convened by WTI in February 2020.⁴⁶² Ultimately, WTI summarized the results of this work in a report released in June 2020, *Toward a Sense of the Basin*,⁴⁶³ which both responded to Commissioner Burman’s request and serves as this Part’s foundation.⁴⁶⁴

To be clear, however, the intent in the pages that follow is not only to report what more than 100 basin leaders have said about next-generation Colorado River governance. We also offer our own conclusions and prescriptions to guide the new management framework’s development over the next few years. In addition, building on feedback from many basin leaders during WTI’s interviews, we cast our eyes further into the future, suggesting how these short-term negotiations should be understood and harnessed as a path toward more inclusive, adaptive, and resilient approaches to Colorado River governance beyond 2026.

A. Vision

Form should follow function. That proposition is our entry point into next generation governance institutions for the Colorado River system. They should strive to embody the collective vision of the *whole* community of communities. Whether designed for short- or long-term purposes, Colorado River governance entities and processes should be guided by and responsive to the values and aspirations of the basin community in its entirety. Anything less is exclusionary, provincial, undemocratic, and suspect in light of the basin’s history.

Yet there is a major problem. No recognized forum exists to bring together the basin’s community of communities for dialogue of this sort, and thus there have been few, if any, attempts to forge a consensus-based vision. WTI has sought to bridge this gap.

As a threshold matter, WTI’s interviews with basin leaders throughout 2019 began by asking about their respective visions for the Colorado River system looking out twenty-five, fifty, or even a hundred years.⁴⁶⁵ Responses generally fell into two camps, “policy-oriented” visions and “process-oriented” visions,⁴⁶⁶ as synthesized below.

From a policy perspective, the most common vision articulated is that next-

461. *Id.*

462. *Id.*

463. *Id.*

464. *Id.* at 14.

465. *Id.* at 16.

466. *Id.* at 18.

generation governance institutions should foster sustainable, resilient use of the Colorado River system for human beings *and* the rest of nature.⁴⁶⁷ Some basin leaders even referred to the new management framework as “sustainability” guidelines.⁴⁶⁸ This vision is a call to move away from antiquated institutions that treat the river system as mere plumbing for human beings, and toward contemporary institutions that manage the river system holistically—as an interconnected ecosystem encompassing human beings and the rest of nature.

As for basin leaders’ perspectives on process, four key points were emphasized.⁴⁶⁹ First, collaboration should be used as a process of first resort in Colorado River governance, in lieu of litigation or other adversarial options.⁴⁷⁰ Second, governance institutions should evolve from ad hoc collaboration to more intentional, ongoing systems of collaborative problem-solving and decision-making.⁴⁷¹ Third, existing institutions should move toward a more adaptive management framework that supports modifying the river system’s operation in sync with changing hydrological conditions.⁴⁷² And fourth, Colorado River governance should continue progressing in the direction of a unified system of water management across the basin—*i.e.*, throughout the Upper Basin and Lower Basin and within the United States and Mexico.⁴⁷³

Taken together, some basin leaders viewed this combination of policy- and process-oriented visions as marking a paradigm shift too cumbersome and unworkable to guide the new management framework’s development.⁴⁷⁴ Conversely, other basin leaders suggested it is important to seek consensus on an overarching vision for the Colorado River system, and then to realize that vision incrementally through a variety of public processes, including but not limited to those associated with the new management framework.⁴⁷⁵ In line with the latter view, the basin community should adopt a worldview of “pragmatic idealism,” as described by one basin leader,⁴⁷⁶ an unabashedly bold vision coupled with a gradual, incremental approach.

Complementing its interviews with basin leaders, WTI delved more deeply into visions for the Colorado River system by examining those expressed by Native communities.⁴⁷⁷ In a policy brief released in October 2020, *A Common Vision for*

467. *Id.*

468. *Id.*

469. *Id.* at 16–17.

470. *Id.* at 16.

471. *Id.* at 17.

472. *Id.*

473. *Id.*

474. *Id.*

475. *Id.*

476. *Id.*

477. WATER & TRIBES INITIATIVE, POLICY BRIEF #3, A COMMON VISION FOR THE COLORADO RIVER SYSTEM: TOWARD A FRAMEWORK FOR SUSTAINABILITY (2020), <http://naturalresourcespolicy.org/docs/policybrief3finalweb.pdf> [hereinafter POLICY BRIEF #3].

the Colorado River System, WTI synthesized vision statements prepared by four tribal groups.⁴⁷⁸ They included (1) the Ten Tribes Partnership vision statement; (2) the tribal vision for protecting the Colorado River prepared and ratified by the Cocopah, Chemehuevi, Fort Mojave, Hualapai, and Colorado River Indian Tribes in 2015, and endorsed by the Quechan Tribe in 2019; (3) the Bluff Principles generated through a series of conversations among Hopi and other tribal leaders in Moab and Bluff, Utah in 2016; and (4) the Tribal Water Study jointly completed by the Ten Tribes Partnership and the Bureau of Reclamation in 2018.⁴⁷⁹

Relying on these Native voices, and blending them with what basin leaders had shared during interviews and at related gatherings, WTI identified a number of common values and themes, incorporating them into the following “Resolution for Sustainability”:

Whereas water is life; it is a precious, life-giving resource;

Whereas water is sacred; it is valued for spiritual, cultural, and ecological purposes as well as for sustaining human populations and economies;

Whereas water is foundational to the identities of tribes in the Basin and provides an intrinsic connection to their wellbeing and homelands;

Whereas water in the Colorado River system is essential to urban and rural communities; municipal, agricultural, industrial, recreational, and other uses; and to more than 40 million people in two countries, seven states, and [30] sovereign Indian nations; and

Whereas natural and cultural resource conservation are connected.

Now, therefore, be it resolved that the next framework to govern the Colorado River system should:

- ☐ Promote and support the sustainable, resilient use of the River system for people and the rest of nature;
- ☐ Ensure the spiritual, cultural, and ecological integrity of the River system while providing water for human use and consumption;

478. *Id.*

479. *Id.* at 1–4. See also TRIBAL WATER STUDY, *supra* note 19.

- ☐ Equitably allocate water by considering the contemporary diversity of needs, interests, and priorities; historical use patterns; and the realities of drought and climate change;
- ☐ Promote and support reliable access to clean water for all residents of the Colorado River system;
- ☐ Leave the earth and its water systems better than we found them;
- ☐ Honor, respect, and realize the federal government's trust responsibility toward the Basin's tribes in a manner that acknowledges their sovereignty and human right to self-determination;
- ☐ Engage in collaboration as the action of first resort to develop policy and solve problems; and
- ☐ Integrate traditional indigenous knowledge with western science to better understand the River system and the consequences of alternative management scenarios.⁴⁸⁰

This resolution is a great place to begin—a starting point for next-generation Colorado River governance institutions. While it may not exhaustively reflect the values and aspirations of the entire Colorado River Basin community, it does so for a broad segment of that community, articulating a vision for the river system that embraces human beings and the rest of nature, instrumental and intrinsic values, land and water—in short, a holistic vision for a *living* river system. As tribal and other leaders imagine a new management framework over the next several years, we encourage them to think deliberately about this sustainability resolution, and to embrace the wisdom of “pragmatic idealism.” In the spirit of collaboration, these leaders should create opportunities for representatives from diverse communities in and around the basin to discuss the resolution, including how its vision might be refined to account more fully for the values and aspirations of the whole community of communities.

B. Navigation

Of course, the vision needs to be realized, too. And the basin community—leaders and otherwise—must be mindful of opportunities and challenges associated with navigating the vision from the realm of values and aspirations to the realm of action. Such navigation involves many questions. Which elements of

480. POLICY BRIEF #3, *supra* note 477, at 5 (internal citations omitted).

the vision should shape the new management framework for the Colorado River system—the framework itself as well as negotiation processes—and which elements should be addressed elsewhere? Similarly, which elements should be acted on sooner rather than later, and which elements should be approached with a long-sighted view? Further, how should cultural and ecological values be integrated into modeling and decision-making processes used to develop the new management framework? And, in the final analysis, how should the basin community address trade-offs to find an optimal balance between consumptive uses (*e.g.*, drinking water, agriculture, industry, etc.) and non-consumptive uses (*e.g.*, instream flows for fish and wildlife, sustaining plants for traditional and subsistence purposes, ceremonial and spiritual uses, etc.)? Vision-driven navigation of this sort is the essence of collaborative decision-making—working together to achieve shared goals—and should be regarded as the foundation of next-generation Colorado River governance.

This perspective does not come out of the blue. Rather, it has roots in opportunities and challenges shared by basin leaders during WTI’s interviews throughout 2019—again, as summarized in *Toward a Sense of the Basin*.⁴⁸¹

Opportunities abound for next-generation Colorado River governance right now. Time is of the essence. *Carpe diem*. Recall the confluence described above—the synced expiration of the Interim Guidelines, Drought Contingency Plans, and Minute 323 at the end of 2025 and 2026.⁴⁸² This confluence creates a blank slate of sorts to bring fresh, creative ideas to bear on governance institutions. Many basin leaders explained that, while it is important to build on lessons learned and existing institutions, the confluence presents a unique opportunity to consider alternative arrangements for managing the river system. It is an exceptional time to encourage experiments and pilot projects aimed at achieving sustainable and resilient water use. Basin leaders pointed to a host of measures involving variations on (1) augmenting supply, (2) reducing demand, (3) modifying operations, and (4) facilitating governance and implementation of operating guidelines and water management strategies.⁴⁸³ Several basin leaders also noted that the new

481. SENSE OF THE BASIN, *supra* note 460.

482. See *supra* Part III.B.3.

483. The Bureau of Reclamation’s Basin Study addressed numerous measures in these areas. TECHNICAL REPORT F, *supra* note 377; TECHNICAL REPORT G, *supra* note 377. Building on these measures, basin leaders suggested a variety of tools should be more fully developed and employed, at least experimentally: (1) augmenting supply—water recycling/reuse, aquifer recharge/underground storage, desalination, and stormwater collection; (2) reducing demand—new system conservation programs, ICS creation at Lake Powell, drought management at Colorado River Storage Project units, classification of water conservation as a “beneficial use” in basin states, conservation easements for unused tribal water, and compensation for water non-use, including to tribes; (3) modifying operations—incentivizing and

management framework provides a chance to institutionalize ongoing systems of engagement and decision-making.⁴⁸⁴ “It is time to acknowledge and accept all the uncertainties facing the basin and that we are going to live in a state of perpetual negotiation to manage the river,” explained one leader.⁴⁸⁵ In line with this viewpoint, the confluence marks a special moment for building innovative systems of collaborative, adaptive governance and moving away from more centralized, stationary approaches to decision-making.⁴⁸⁶

What exactly should be done with the new management framework in this moment? It’s no surprise most basin leaders agree the framework should include operational elements similar to those in the Interim Guidelines, Drought Contingency Plans, and Minute 323, including shortage-sharing regimes and coordinated reservoir operations.⁴⁸⁷ Many tribal and other leaders, however, also

liberalizing water trading and sharing in relation to developed and undeveloped tribal water rights, interstate and inter-basin transfers, and agriculture-to-urban transfers; and (4) facilitating governance and implementation—managing growth and linking land use and water planning. *SENSE OF THE BASIN*, *supra* note 460, at 20. Many basin leaders commented that the future of Colorado River system management is less about acquiring and developing water rights (except for tribes) and more about sharing available water resources through trading and other exchange mechanisms. *Id.* at 22 n.4. This perspective is evident in several tools just identified within the reducing demand and modifying operations categories.

484. *SENSE OF THE BASIN*, *supra* note 460, at 20.

485. *Id.*

486. Many basin leaders expressed interest in building on the basin’s collaborative culture and moving slowly—but intentionally—from ad hoc collaborative processes to ongoing collaborative systems of decision-making. *Id.* at 22 n.5. The rationale for this transformation revolves around three observations: (1) the basin community is in an era where decisions must be made in the face of uncertainty, and thus there is an ongoing need to learn what is working or not working and to adapt management; (2) it should be possible to build flexibility into decisional documents (*e.g.*, records of decision entered pursuant to the National Environmental Policy Act) to allow decision-makers to engage in adaptive management without multi-year negotiations and/or congressional consent; and (3) there are significant transaction costs to starting-up basinwide collaborative processes every three to five years. *Id.* In sum, basin leaders are aware of the need to work together, and thus the idea is to establish a more permanent system of collaborative governance to do so efficiently and effectively. Some leaders take this process issue one step further, suggesting the basin community should move (albeit slowly) toward a unified system of management and governance, drawing on increased coordination between the United States and Mexico under Minute 323 and between the Upper Basin and Lower Basin under the Drought Contingency Plans. *Id.* The idea here is to strive for incremental progress toward sustainable water use, to realize that climate change and other external forces are accelerating the timeline for institutional change, and therefore to adjust the basic architecture for governance. By contrast, other leaders prefer an “if it ain’t broke, don’t fix it” approach. *Id.* In other words, the existing ad hoc system of collaborative problem-solving is perceived as working, so let it be and make marginal improvements where it is quick and easy to do so. *Id.* Some leaders also suggested that the basin states may resist this evolution in governance given (1) the Lower Basin states’ (uneasy) partnership with the Bureau of Reclamation along the Lower Colorado River, and (2) the Upper Basin states’ more autonomous system facilitated by the UCR. *Id.* Another key tension seems to be the degree to which tribes should be treated as co-equal sovereigns alongside the federal and state governments. *Id.*

487. *Id.* at 20. These aspects of the Interim Guidelines, Drought Contingency Plans, and Minute 323 are discussed *supra* Part III.B.3.

suggested it's time to move beyond managing the river system as plumbing for cities and farms, and toward a more robust scheme that better accommodates multiple needs and interests, including tribal sacred and cultural values, ecological and recreational values, and the integration of land and water management.⁴⁸⁸ Consistent with WTI's sustainability resolution, the intent here is to articulate a holistic vision for a *living* river system, and then to make incremental progress toward realizing that vision—again, “pragmatic idealism.”⁴⁸⁹ During such vision-driven navigation, the basin's community of communities needs to carefully consider trade-offs between water-supply goals and ecosystem-protection and restoration objectives, and to move from a system focused on water use to watershed management.⁴⁹⁰

As for specific issues that should be addressed during the new management framework's development, basin leaders pointed to three Gordian knots of

488. Many basin leaders acknowledged negotiations over the new management framework will most likely start with existing agreements—particularly, the Drought Contingency Plans—and suggested a logical path forward is to identify gaps in those plans and ways in which they could be improved. By contrast, several leaders suggested that with the synced expiration of the Interim Guidelines, Drought Contingency Plans, and Minute 323, nothing should be placed off the table at the negotiations (at least at the start), and participants should carefully evaluate tradeoffs and return on investment associated with vetting particular issues and solutions. Many leaders endorsed the idea that the negotiations should strike a balance between addressing the most urgent needs and interests (*e.g.*, refining the coordinated operating regime for Lake Powell and Lake Mead) and underlying, unresolved problems (*e.g.*, the structural deficit in the Lower Basin and the Upper Basin states' flow obligations under the Colorado River Compact). The intent in this vein is to consider broader issues as well as to generate an operational plan. The basic rationale is that things have changed in some fundamental ways since the Interim Guidelines were adopted. The basin's community of communities needs to better accommodate the interests of Mexico, tribes, recreationalists, and environmentalists, as well as to acknowledge the reality of climate change. The immediate goal should be to find the sweet spot between the perfect and the practical—again, to craft an inclusive long-term vision and then to take incremental steps towards realizing it.

489. Basin leaders framed this subject in different ways. Here is a representative sample of specific aspects of it: (1) seek agreement on standards or principles for shortage sharing and provide equity in processes and policies for shortage sharing between the United States and Mexico, tribal sovereigns vis-à-vis state and federal sovereigns, the Upper Basin and Lower Basin, agricultural and municipal water users, consumptive and non-consumptive water users, etc.; (2) integrate a shortage-sharing regime(s) with the Glen Canyon Dam Long-Term Experimental and Management Plan, Lower Colorado River Program, Upper Basin Program, San Juan Program, salinity control program, and operating guidelines for all dams and reservoirs in the system; (3) address ecological conditions in the Colorado River Delta as well as issues in and around the Salton Sea; (4) address fish, wildlife, and recreational issues alongside hydropower issues and provide recreation al/environmental flows; and (5) produce a comprehensive environmental impact statement and long-term basinwide plan rather than addressing issues in a siloed or fragmented way.

490. Along these lines, some basin leaders commented on the need to clarify legal foundations for ecological protection and restoration in the Colorado River Basin, as well as specific goals and targets for different stretches of the river system (*e.g.*, the Grand Canyon and Colorado River Delta). Without such information water-supply decisions will continue driving the system by default. A few leaders suggested John Wesley Powell's watershed-commonwealths proposal should inform a long-term vision for a sustainable, resilient river system. Powell's proposal is discussed *supra* Part I.

Colorado River governance.⁴⁹¹

The Lower Basin's "structural deficit" is the first Gordian knot. It generally refers to the imbalance between water supplies and demands in the Lower Basin.⁴⁹² Numerous basin leaders raised concerns about it.⁴⁹³ Most leaders seem to view this imbalance as resulting from multiple years of below-average supplies and excess depletions, and to favor Lower Basin policymakers developing a long-term plan with a realistic water budget aimed at (1) increasing supplies (*e.g.*, augmentation from desalination or other sources); (2) reducing losses (including ways to account for reservoir evaporation and other unavoidable losses); and (3) reducing consumption (*e.g.*, strategies for reducing water demands for agricultural, industrial, and municipal uses through conservation and voluntary purchases or retirement of water rights).⁴⁹⁴ Many basin leaders cautioned that the structural deficit will be increasingly difficult to address if water demands increase in the Upper Basin while climate change continues to diminish water supplies.⁴⁹⁵

The second Gordian knot involves the Upper Basin states' flow obligations to the Lower Basin states and Mexico under the Colorado River Compact.⁴⁹⁶ Nearly every basin leader commented that the new management framework should address this issue. Many leaders see it as closely tied to the Lower Basin's structural deficit.⁴⁹⁷ The general question seems to be whether existing expectations associated with the flow obligations are equitable in light of climate change and potential future development of tribal and/or state water rights in the Upper Basin.⁴⁹⁸ Some leaders believe the Upper Basin states need to come to terms with the fact that they will not be able to consume more than 4.5 maf annually from the river system.⁴⁹⁹ This issue thus implicates potential development and implementation of a demand management program under the Upper Basin

491. SENSE OF THE BASIN, *supra* note 460, at 21.

492. More detailed treatment of the structural deficit can be found in Robison, *supra* note 253, at 536–42.

493. SENSE OF THE BASIN, *supra* note 460, at 21.

494. *Id.*

495. *Id.* at 18.

496. Compact, *supra* note 24, at Art. III(c)–(d). One leader explained that the "minimum objective release" from Lake Powell is 8.23 maf annually, accounting for 7.5 maf as an annual average release under Article III(d) plus 750,000 acre-feet as an equal share of Mexico's treaty water under Article III(c). Another leader explained that the 8.23 maf "minimum objective release" from Lake Powell was a function of the Long-Range Operating Criteria's 602(a) storage provision, which is currently superseded by the 2007 Interim Guidelines' elevation tier-based coordinated operating regime for Lake Powell and Lake Mead.

497. SENSE OF THE BASIN, *supra* note 460, at 21.

498. Do climate change's impacts rise to the level of "extraordinary drought" within the meaning of Article 10(b) of the U.S.-Mexico Treaty? Treaty, *supra* note 27, at Art. 10(b). Several basin leaders suggested this issue should be addressed and resolved during negotiations over the new management framework.

499. SENSE OF THE BASIN, *supra* note 460, at 21.

Drought Contingency Plan.⁵⁰⁰

The third issue that rose to the level of a Gordian knot vis-à-vis the new management framework is the recognition, quantification, and utilization of tribal water rights. The Colorado River Basin's tribal sovereigns have quantified rights to divert a large portion of the basin's flows. Alongside the figures noted above from the Basin Study and Tribal Water Study,⁵⁰¹ the most recent counterpart from the Bureau of Reclamation comes from the 7.D. Review.⁵⁰² "In addition to currently unquantified rights, Reclamation recognizes that tribes hold quantified rights to a significant amount of water from the Colorado River and its tributaries (approximately 3.4 maf of annual diversion rights)"⁵⁰³ That 3.4 maf figure equates to approximately 23 percent of average annual natural flows at Lees Ferry.⁵⁰⁴ Many tribes are not fully using their quantified water rights, however, due to lack of infrastructure, lack of funding, or antiquated and inefficient water systems.⁵⁰⁵ In addition, a dozen tribes have unquantified water rights.⁵⁰⁶ Yet basinwide demands *already* exceed supplies.⁵⁰⁷ While tribes expect to fully use their water rights to satisfy social, economic, and environmental interests, non-Indian parties are concerned about the integration of tribal water rights with existing and future water uses. Recall the cloud metaphor.⁵⁰⁸ Although there has been progress in recent decades to address tribal water rights without displacing non-Indian water uses, this issue remains a major concern.

The process of developing a new management framework for the Colorado River system thus provides an ideal opportunity for tribes to work with the federal government, basin states, and other stakeholders to address a number of critical questions about tribal water rights:

500. DEMAND MANAGEMENT STORAGE AGREEMENT, *supra* note 444.

501. TECHNICAL REPORT C, *supra* note 378, at C-38 (identifying 2.9 maf of quantified annual diversion rights plus a dozen tribes with unquantified rights and claims); TRIBAL WATER STUDY, *supra* note 19, at 5.11-1 ("Partnership Tribes have reserved water rights, including unresolved claims, to divert nearly 2.8 million acre-feet per year . . . from the Colorado River and its tributaries.").

502. 7D REVIEW, *supra* note 29.

503. *Id.* at 14. See also WATER & TRIBES INITIATIVE, POLICY BRIEF #4, THE STATUS OF TRIBAL WATER RIGHTS IN THE COLORADO RIVER BASIN 1 (2021) ("There are 30 federal recognized tribes in the Colorado River Basin. Twenty two of these tribes have recognized rights to use 3.2 million-acre feet (maf) of Colorado River system water annually, or approximately 22 to 26 percent of the Basin's average annual water supply."), <http://www.naturalresourcespolicy.org/publications/policy-brief-4-final-4.9.21-.pdf> [hereinafter POLICY BRIEF #4].

504. Natural flows at Lees Ferry averaged 14.76 maf annually from 1906 to 2018. HOMA SALEHABADI ET AL., CENTER FOR COLORADO RIVER STUDIES, UTAH STATE UNIV., THE FUTURE HYDROLOGY OF THE COLORADO RIVER BASIN 1–2 (2020), <https://qcnr.usu.edu/coloradoriver/files/WhitePaper4.pdf>.

505. This underutilization pattern can be seen in TECHNICAL REPORT C, *supra* note 378, at C-41 fig. C-18.

506. POLICY BRIEF #4, *supra* note 503, at 1, 7 tbl. 3.

507. STUDY REPORT, *supra* note 376, at SR-34 fig. 12.

508. Cordalis & Cordalis, *supra* note 374.

- How can the new management framework encourage the development and use of tribal water rights in a way that is consistent with the principle of tribal self-determination? In other words, what types of provisions should be included in the framework that provide flexibility and opportunities for tribes to use their water rights as they see fit—*e.g.*, to provide access to clean water in Native communities,⁵⁰⁹ to sustain cultural and ecological values, and/or to transfer water rights or share them with other water users?
- How can the future development of unused tribal water rights be reconciled with the overall goal of rectifying the basinwide supply-demand imbalance?
- What does the status of tribal water rights in the basin suggest in terms of modeling and scenario planning for the development of the new management framework? What type of information would help tribal and other leaders shape policy options aimed at accommodating tribal water rights and existing non-Indian water uses?

Many basin leaders suggested it is time to explicitly acknowledge the role of tribal sovereigns and their water rights in resolving the basinwide supply-demand imbalance—an approach partly illustrated by the role played by tribes in developing the Lower Basin Drought Contingency Plan.⁵¹⁰ For many basin leaders—particularly, tribal leaders—the role of tribes in the future should be based upon the fundamental principle of self-determination.⁵¹¹ Tribes should be allowed to develop and use their water rights as they see fit for economic, public health, ecological, or ceremonial reasons. If tribes are interested, the new management framework potentially could establish mechanisms enabling short-term water transfers during shortages, as well as long-term water transfers to better align basinwide supplies and demands. Any such options would move the basin's community of communities toward a key tenet of next-generation Colorado River governance: respect for tribal sovereignty and self-determination.

509. For an excellent source on this subject, see WATER & TRIBES INITIATIVE, UNIVERSAL ACCESS TO CLEAN WATER FOR TRIBES IN THE COLORADO RIVER BASIN, EXECUTIVE SUMMARY (2021), <http://www.naturalresourcespolicy.org/projects/water-tribes-colorado-river-basin/3.20-wti-report-executive-summary-final.pdf> [hereinafter UNIVERSAL ACCESS EXECUTIVE SUMMARY].

510. SUNDUST et al., *supra* note 439, at 7–10.

511. Self-determination is the defining principle of federal Indian policy at this time. COHEN's, *supra* note 179, at 97–113. Further, as set forth in the United Nations Declaration on the Rights of Indigenous Peoples, self-determination is a human right: "Indigenous peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development." G.A. Res. 61/295, art. 3, United Nations Declaration on the Rights of Indigenous Peoples (Sept. 13, 2007).

C. Institutions

Given the general consensus around a sustainability vision for the Colorado River system, along with the shortlist of pressing policy issues currently facing the basin, what types of institutions are needed to realize the vision and to navigate the policy issues? Put differently, how do we build on advancements in collaborative governance during recent decades to design next-generation institutions that reflect even more fully the whole character of the basin's community of communities? Questions of this sort about institutional design are critical. We roll out a sequence of ideas in the pages below.

1. Guiding Principles

WTI's interviews with basin leaders in 2019—as summarized in *Toward a Sense of the Basin*⁵¹²—again mark our entry point. Drawing on their experiences with recent processes in the Colorado River Basin, as well as lessons learned from planning and decision-making efforts in other transboundary basins, leaders offered eight key principles aimed not only at guiding the new management framework's development, but also shaping more durable institutions for Colorado River governance over the long haul. These principles are as follows:

- Use NEPA as the foundation for the new management framework's development, particularly provisions on public participation and alternatives analysis.⁵¹³
- Encourage and support informal collaborative processes to supplement the formal NEPA process in order to build awareness, understanding, and consensus across the basin's community of communities.⁵¹⁴
- Recognize the Secretary of the Interior and/or Reclamation Commissioner will have final decision-making authority in consultation with the basin states.⁵¹⁵
- Provide opportunities for tribes to meaningfully engage in the new management framework's development as sovereigns, rather than as a special type of stakeholder.⁵¹⁶
- Structure negotiations over the new management framework to be open,

512. SENSE OF THE BASIN, *supra* note 460.

513. *Id.* at 26.

514. *Id.*

515. *Id.*

516. *Id.* at 26, 29.

transparent, and inclusive, and to provide opportunities for meaningful participation by any parties interested in or affected by the process.⁵¹⁷

- ☐ Use the best available scientific and technical information, including Indigenous knowledge, to develop the new management framework.⁵¹⁸
- ☐ Seek consensus as much as possible, particularly among basin sovereigns (*i.e.*, federal government, seven basin states, and thirty federally recognized tribes).⁵¹⁹
- ☐ Allow for learning and adaptive management, as we will never have complete knowledge and information, and always manage the river system in the face of change and uncertainty.⁵²⁰

2. Decision-makers

As these guiding principles reveal, a threshold question in designing any transboundary water institution—including negotiation processes—is, “Who is going to make what decision?” In relation to the new management framework,

517. *Id.* at 26.

518. In addition to modeling alternative scenarios, many basin leaders explained an informed process is one that fosters mutual learning, common understanding, and consideration of a variety of options. In line with this view, all sovereigns, water users, and stakeholders should have equal opportunities to share views and information. Some leaders suggested the process should provide sufficient time and space for creative, outside-the-box thinking to generate innovative ideas, options, and solutions, including those that might technically fall beyond constraints rooted in existing interpretations of the Law of the River. As one leader expressed, “the crisis of the moment is solved by whatever good ideas are laying around; so, an important part of preparing for a nd engaging in the next basin-wide negotiation process is to litter the field with good ideas so there are lots of resources available when the decision-making process catches up.” An informed process should also enable participants to develop a range of alternatives to address the purpose and need, realizing no one of them will be perfect. Rather, elements from several alternatives generated by different groups almost certainly will be cobbled together into an agreed-upon package. The Interim Guidelines themselves were based on an alternative that adopted large portions of a basin states’ proposal, but also incorporated concepts from others. BUREAU OF RECLAMATION, FINAL ENVIRONMENTAL IMPACT STATEMENT, COLORADO RIVER INTERIM GUIDELINES FOR LOWER BASIN SHORTAGES AND COORDINATED OPERATIONS FOR LAKE POWELL AND LAKE MEAD 6-3 to 6-5 (2007), <https://www.usbr.gov/lc/region/programs/strategies/FEIS/Chp6.pdf> [hereinafter INTERIM GUIDELINES FEIS].

519. As explained by one group of basin leaders, the goal is to “build a broad coalition of states, water users, tribes, stakeholders, and others that support the preferred alternative or recommendation in the Record of Decision.” SENSE OF THE BASIN, *supra* note 460, at 28.

520. *Id.* Many basin leaders favored development of a twenty-five-year plan rather than a series of three- to five-year plans given the transaction costs of starting and stopping every few years. From a longer-term perspective, the new management framework should create an ongoing process to monitor the Colorado River system, to learn, and to adjust or adapt management strategies. Similar to the Drought Contingency Plans, this process should include explicit triggers to initiate alternative management strategies (*e.g.*, reservoir elevations). *Id.*

basin leaders' answers to that question include a mix of contextual parameters and sovereign and non-sovereign actors.⁵²¹

The foreseeable scenario is identified by the principles. NEPA will structure the formal process for negotiating the new management framework,⁵²² and the Secretary of the Interior and/or Reclamation Commissioner will have final decision-making authority.⁵²³

In addition to this dominant federal role, however, most basin leaders opined that the basin states should play a significant role in the new management framework's development. A host of reasons were given: (1) the Colorado River Compact apportions water between the Upper Basin and Lower Basin while recognizing state control over water administration within state boundaries;⁵²⁴ (2) tribal water use is charged against basin states' apportionments under the Upper Basin Compact and *Arizona v. California* decree;⁵²⁵ (3) basin states most likely will assume responsibility to build coalitions among diverse constituents within their boundaries; (4) states have constitutional authority to form interstate compacts and agreements;⁵²⁶ and (5) the federal government generally defers to state water law outside specific contexts (*e.g.*, reserved rights).⁵²⁷ In light of these parameters, some basin leaders suggested the new management framework might be developed through something akin to the negotiation process for the Drought Contingency Plans, where states initially negotiated agreements that were subsequently enacted as federal law and implemented by a federal agency.⁵²⁸

In the final analysis, the process of developing the new management framework most likely will be a hybrid model, where the basin states negotiate an

521. *Id.* at 29–33.

522. *Id.* at 26. NEPA requires federal agencies to prepare environmental impact statements for “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(C) (2020). The new management framework's development and implementation qualify as such an action.

523. SENSE OF THE BASIN, *supra* note 460, at 26. Many basin leaders explained that the Bureau of Reclamation may play a host of roles in the negotiations beyond initiating and convening the formal NEPA process, including providing technical expertise, serving as facilitator or mediator, and advising on international negotiations with Mexico.

524. *See, e.g.*, Compact, *supra* note 24, at Art. IV(c).

525. Upper Basin Compact, *supra* note 251, at Art. VII; *Arizona v. California*, 547 U.S. 150, 159 (2006).

526. U.S. CONST. art. I, § 10, para. 3 (“No State shall, without the Consent of Congress . . . enter into any Agreement or Compact with another State . . .”).

527. The Colorado River Basin Project Act further addresses federal-state relations by declaring:

It is the policy of the Congress that the Secretary of the Interior . . . shall continue to develop, after consultation with affected States and appropriate Federal agencies, a regional water plan, consistent with the provisions of this Act and with future authorizations, to serve as the framework under which projects in the Colorado River Basin may be coordinated and constructed.

43 U.S.C. § 1501(b) (2020).

528. SENSE OF THE BASIN, *supra* note 460, at 26.

agreement that is considered as one alternative in the NEPA process. The Interim Guidelines' formation illustrates such an approach.⁵²⁹ Whether Congress ultimately would need to review the outcome of the NEPA process is an open question that seemingly revolves around which particular funding requests and policy measures are incorporated into the new management framework.

Looking beyond the dominant roles played by the federal and state sovereigns in developing the new management framework, many basin leaders favored the "community of decision-makers" being broader and more inclusive.⁵³⁰ As noted above in the guiding principles, many leaders suggested that the thirty basin tribes, as sovereigns alongside the federal government and basin states, should have a seat at the decision-making table.⁵³¹ This expanded inclusivity in the "community of decision-makers" would not only level the playing field to an extent among basin sovereigns, but also treat tribes as partners with the federal government and basin states rather than as non-sovereign stakeholders per past processes.

To operationalize this idea, several basin leaders suggested creating a Sovereign Review Team comprising representatives from the federal government, basin states, and basin tribes.⁵³² This approach was used successfully in the Columbia River Basin—which encompasses portions of Idaho, Montana, Oregon, Washington, and Wyoming—to prepare for renegotiation of the Columbia River Treaty between the United States and Canada.⁵³³ The basic premise of this arrangement is that federal, state, and tribal governments share a unique character in being sovereign—a character distinct from myriad non-sovereign stakeholders with interests in the Colorado River system. The sovereign status of these entities elevates them into the "community of decision-makers" if you will. In addition, some basin leaders analogized the Sovereign Review Team's structure to the structure of negotiations for tribal water rights settlements as described above, where federal, state, and tribal representatives collaborate to resolve Indian reserved rights claims.⁵³⁴ Several basin leaders even suggested the Sovereign Review Team should also include Mexico as a neighboring federal sovereign, although doing so would not obviate the need for international negotiations under the auspices of the IBWC.

As an incremental step in expanding inclusivity within the "community of decision-makers," several basin leaders envisioned the Sovereign Review Team operating as an advisory group in the new management framework's development.

529. See INTERIM GUIDELINES FEIS, *supra* note 518, at 2–8 to 2–12.

530. SENSE OF THE BASIN, *supra* note 460, at 26–27.

531. *Id.* at 26.

532. *Id.* at 29–30.

533. See, e.g., U.S. ENTITY, COLUMBIA RIVER TREATY 2014/2024 REVIEW RECENT STUDY RESULTS (2012), <https://www.bpa.gov/news/pubs/FactSheets/fs-201206-Columbia-River-Treaty-Review-Recent-Study-Results.pdf>.

534. SENSE OF THE BASIN, *supra* note 460, at 29. Tribal water rights settlements are discussed *supra* Part III.B.2.

In that capacity, it would (1) serve as the primary forum for receiving input and advice from various stakeholders, experts, and the public; (2) foster a common understanding and develop alternatives for the new management framework; (3) seek agreement on a preferred alternative; and (4) advise the Secretary of the Interior and/or Reclamation Commissioner as the final decision-makers in the NEPA process. An alternative option would be for the Sovereign Review Team to function as an advisory group that is supplementary to the federal government and basin states as principal decision-makers. In contrast to these options, several basin leaders suggested the Sovereign Review Team would be even more effective if the Secretary of the Interior established it not just as an advisory body, but instead as a formal entity within the decision-making process.

Some basin leaders agreed with the Sovereign Review Team concept in principle, but ultimately dismissed it as unworkable.⁵³⁵ The primary concern revolved around efficiency: how to effectively represent the basin's sovereigns while still keeping the "community of decision-makers" small enough to get work done.⁵³⁶ Several tribal and other leaders offered a range of creative solutions in response.⁵³⁷ One way to operationalize the Sovereign Review Team would be to ask the federal government to designate one or two representatives; to ask each basin state to appoint one representative; and to ask basin tribes to select a limited

535. SENSE OF THE BASIN, *supra* note 460, at 10. The Sovereign Review Team concept received mixed reviews at WTI's basinwide workshop in February 2020. On the one hand, many participants agreed it could provide a meaningful role for basin tribes, integrate more perspectives into planning and decision-making processes, and facilitate broad-based learning and education. Some participants suggested a Sovereign Review Team should facilitate transactional opportunities in addition to sharing information, building relationships, and refining the governance structure. Several participants also emphasized that a Sovereign Review Team makes sense as a supplement to other processes, but not as a replacement for formal consultation with basin tribes. Creating a Sovereign Review Team, according to many participants, would be a major step forward in Colorado River governance. On the other hand, many participants raised the issue described in the text concerning how all thirty basin tribes could be represented on the Sovereign Review Team, particularly in light of the variation in interests, capacities, and cultures. The priorities for some tribes may be to develop and use their water rights for economic purposes, while other tribes may be interested in developing and using their water rights for a mix of economic, environmental, and cultural objectives. Moreover, some tribes have unresolved water rights claims, while other tribes hold quantified rights. Participants also expressed concern about how a Sovereign Review Team could be structured to ensure its work would be given serious consideration by the ultimate decision-makers—*i.e.*, the Secretary of the Interior and/or Reclamation Commissioner—as the Sovereign Review Team itself is not envisioned as a formal decision-making body. Some participants likewise raised questions about whether the Sovereign Review Team would be subject to the Federal Advisory Committee Act, while other participants asked related questions about who would convene, staff, and fund a Sovereign Review Team, as well as how consensus might be reached among such a large, diverse group of participants. Other participants noted that basin states would need to work closely with basin tribes whose reservations lie within the states' boundaries to forestall potential attempts to use the Sovereign Review Team as an appeals process. And finally, some participants wondered whether a Sovereign Review Team would distract tribes from formal decision-making processes. *Id.*

536. *Id.*

537. *Id.* at 29–30.

number of representatives given that direct participation by thirty tribes would be cumbersome. Along these lines, it is important to emphasize each basin tribe is unique, and it may be difficult (if not impossible) to reach tribal consensus on all matters. Two potential options for tribal representation on the Sovereign Review Team are (1) selecting one tribal representative per basin state (*i.e.*, seven in total), or (2) selecting one or two tribal representatives for the Colorado River mainstem tribes, Central Arizona Project tribes, and Upper Basin tribes as groups. Both options would keep the “community of decision-makers” relatively small yet inclusive. Notably, tribal representatives would not speak for basin tribes that are not at the table *per se*, instead assuming responsibility for regularly communicating with those tribes, sharing information and ideas emerging in the Sovereign Review Team, and seeking input and advice.

Other basin leaders expressed concern about how the Sovereign Review Team, as envisioned here, would not represent non-sovereign stakeholders (*e.g.*, irrigators, municipal water users, environmental organizations, etc.).⁵³⁸ These communities *would* continue to participate in collaborative processes much as they have in the past, including the NEPA process, state-led efforts, and other informal arrangements. To facilitate more inclusive engagement of non-sovereign stakeholders, however, the Sovereign Review Team could create working groups, delegate assignments, and ask working groups to generate reports and recommendations. The Sovereign Review Team could also convene public workshops to increase awareness and understanding and to seek broad-based input and advice. From this perspective, the Sovereign Review Team would be a significant step forward in creating next-generation governance institutions that better reflect the Colorado River Basin’s community of communities.

Taking the long view, some basin leaders suggested a Sovereign Review Team might shape Colorado River governance well beyond the new management framework’s development.⁵³⁹ Perhaps over time the Sovereign Review Team would evolve into a standing body to facilitate adaptive management and collaborative decision-making. The catalyst for this line of thought is that a basinwide commission does not currently exist, and that right now might be an opportune moment to begin conceiving such an entity, given the complex problems facing the basin’s community of communities and the collaborative culture that has emerged among them in recent decades.⁵⁴⁰ In other words, the Sovereign Review Team should be

538. *Id.* at 10.

539. *Id.* at 30.

540. Basin leaders offered arguments for and against a basinwide commission. Arguments in favor included (1) establishing clear, consistent, transparent processes for making decisions and resolving disputes, and therefore avoiding the need to reinvent processes time and again; (2) dedicating staff

understood as a potential incremental adjustment to the “community of decision-makers” that could evolve over time into a transformative institution for next-generation Colorado River governance.

3. Role of Tribes

Yet the Sovereign Review Team idea certainly does not end our discussion of tribal engagement in Colorado River governance. It is a compelling topic for so many reasons. In addition to their sovereign nature, the basin’s thirty federally recognized tribes hold substantial, senior rights to Colorado River system water, as identified above—“approximately 3.4 maf of annual diversion rights” according to the 7.D. Review, roughly equivalent to 23% of average annual natural flows at Lees Ferry.⁵⁴¹ This share will increase as additional rights are recognized and quantified.⁵⁴² And basin tribes with quantified rights likewise plan to develop them.⁵⁴³ The proverbial cloud is indeed a Gordian knot.

But you might not know it. History generally shows basin tribes at the margins of Colorado River governance. Their total exclusion from the Colorado River Compact’s formation is one historic episode worth reiterating.⁵⁴⁴ Only in recent decades have they had opportunities to participate directly in policy discussions shaping the river system’s management. Even with the collaborative turn, however, much progress remains to be made. Basin tribes have expressed concern about how they and their water rights were treated in the NEPA process culminating in the Interim Guidelines.⁵⁴⁵ A few years later, the Basin Study likewise got off to a rocky start, with tribes not being represented on the study’s exclusive federal-state steering committee and instead being relegated to technical sub-teams.⁵⁴⁶ The Bureau of Reclamation made earnest efforts to remedy the situation—after being reminded of the federal government’s trust responsibility toward tribes—but even so the Basin Study’s coverage of tribal water rights fell short and necessitated the

whose responsibility would be to consider the entire basin rather than just a portion of it; and (3) moving from an ad hoc system of collaboration to a more deliberate, inclusive system of planning and decision-making. *Id.* at 37 n.4. Arguments in opposition included (1) redefining the basin states’ role; (2) transaction costs associated with creating a commission; and (3) fear of the unknown. *Id.* A good starting point for literature on this topic is David H. Getches, *Colorado River Governance: Sharing Federal Authority as an Incentive to Create a New Institution*, 68 U. COLO. L. REV. 573 (1997).

541. 7D REVIEW, *supra* note 29, at 14; SALEHABADI ET AL., *supra* note 504, at 1 (describing natural flows at Lees Ferry averaged 14.76 maf annually from 1906 to 2018). *See also* POLICY BRIEF #4, *supra* note 503, at 1 (noting twenty-two basin tribes collectively hold “recognized rights to use 3.2 million-acre feet (maf) of Colorado River system water annually, or approximately 22 to 26 percent of the Basin’s average annual water supply.”)

542. *See* POLICY BRIEF #4, *supra* note 503, at 1, 7 tbl. 3 (identifying a dozen basin tribes with unrecognized rights).

543. *See, e.g.*, TECHNICAL REPORT C, *supra* note 378, at C-41 to C-43.

544. HUNDLEY, *supra* note 255, at 80, 211.

545. 7D REVIEW, *supra* note 29, at 12.

546. *See* Vigil Testimony, *supra* note 379.

Tribal Water Study.⁵⁴⁷ That latter study marked a step in the right direction with respect to relationship building and other benefits of collaboration. And the same can be said about basin tribes' participation over the past decade in policy discussions at the Colorado River Water Users Association's annual conference.⁵⁴⁸

The benefits of tribal inclusion at policy tables are readily apparent.⁵⁴⁹ Recall as just one example the recent engagement of the Colorado River Indian Tribes and the Gila River Indian Community on the Steering Committee for the Arizona Drought Contingency Plan.⁵⁵⁰ "Arizona water users were able to reach a deal on the DCP, in part, because Arizona tribes participated in and led negotiations on conservation efforts and water exchanges"—specifically, the Colorado River Indian Tribes' offer to store 50,000 acre-feet annually in Lake Mead over a three-year period beginning in 2020, and the Gila River Indian Community's leasing of 33,185 acre-feet annually to the Central Arizona Groundwater Replenishment District over a twenty-five-year period commencing in 2018.⁵⁵¹ "Tribes in Arizona, including the Gila River Indian Community and the Colorado River Indian Tribes, played a significant role in the new Drought Contingency Plan implementation," described Arizona Representative Raúl M. Grijalva.⁵⁵² "Without tribal participation, the DCP would not be possible"⁵⁵³

According to basin leaders, along with representations made by commentators at recent conferences and policy discussions, there is a general consensus that basin tribes should be more meaningfully involved in policy discussions and negotiations about the Colorado River system's future, including development of the new management framework.⁵⁵⁴ While leaders arrive at this consensus view for diverse reasons, nearly all are interested in the critical question

547. TRIBAL WATER STUDY AGREEMENT, *supra* note 381.

548. SENSE OF THE BASIN, *supra* note 460, at 38. Tribes have participated in planning this conference since 2009, when George Arthur of the Navajo Nation served as vice-president and then president of the Colorado River Water Users Association. *Id.* at 42 n.2.

549. In addition to their engagement in the Lower Basin Drought Contingency Plan, Lower Basin tribes—Colorado River Indian Tribes, Gila River Indian Community, and Tohono O'odham Nation—have participated in a Pilot System Conservation Program since 2015. *Pilot System Conservation Program (Pilot Program)*, BUREAU OF RECLAMATION (2019) <https://www.usbr.gov/lc/region/programs/PilotSysConsProg/pilotsystem.html>. This participation has bolstered Lake Mead's storage so as to stave off a shortage declaration along the Lower Colorado River. *Id.*

550. SUNDUST ET AL., *supra* note 439, at 7–10.

551. *Id.* at 7.

552. *Id.* at 3.

553. *Id.*

554. SENSE OF THE BASIN, *supra* note 460, at 39.

of “how” to make this happen.⁵⁵⁵ Basin leaders seem to agree that (1) the new management framework must address tribal rights and interests in a meaningful way, and (2) the federal government and basin states need to do a better job of reaching out to basin tribes, enhancing tribal capacity to participate vigorously in these types of processes, and listening to basin tribes in an effort to accommodate their respective needs, interests, and priorities.⁵⁵⁶

At the same time, basin tribes need to take advantage of opportunities to participate, to clarify their objectives for managing the river system, and to communicate what they bring to the table in terms of history, knowledge, water rights, and potential solutions. Tribes should be more proactive and less reactive, more assertive and less deferential to federal and state officials, and prepared to engage robustly in the new management framework’s development.

Basin leaders pointed to a range of options for how tribes could participate in decision-making processes surrounding the new management framework. The following options are certainly not mutually exclusive.⁵⁵⁷ First, tribes could engage in government-to-government consultations with the federal government and hold it accountable (1) to fulfill its trustee role with respect to tribal water resources, and (2) to champion any positions on which there is federal-tribal consensus.⁵⁵⁸ To this end, some leaders suggested jump-starting the 7/10 process previously initiated by the Ten Tribes Partnership and the Secretary of the Interior.⁵⁵⁹ Second, tribes could work with officials from the state(s) in which their reservations are located (1) to ensure tribal needs, interests, and priorities are integrated into the negotiating strategy of the state(s) for the new management framework, and (2) to hold the state(s) accountable to champion any positions on which there is state-tribal consensus.⁵⁶⁰ Third, tribes could participate in something like a Sovereign Review Team—as mapped out above—and again hold federal and state officials accountable to champion any positions on which the sovereigns reach

555. Three major reasons are prevalent among the non-tribal basin leaders: (1) respect for equity, social justice, and/or tribal sovereignty in relation to the negotiation process and basin tribes’ abilities to develop and use their water rights; (2) interest in mitigating uncertainty over the impacts of tribal water development on non-tribal water users; and (3) commitment to engaging basin tribes in collaborative problem-solving aimed at meeting the needs and interests of both tribes and other water users reliant on the Colorado River system. Tribes, of course, believe they need to be at the table because of their aboriginal connections to the river system, their expertise and knowledge derived from these longstanding connections, and as a recognition of their sovereign status and the significance of the water rights they hold. *Id.* at 42 n.6.

556. *Id.* at 39.

557. *Id.* at 40.

558. *Id.*

559. *Id.* at 6. According to some basin leaders, representatives of the seven basin states and the Ten Tribes Partnership began discussions in the early 1990s to address problems facing the Colorado River Basin. Known as the “7/10 process,” these officials explored ways of improving water-use efficiency, water management, and voluntary water transfers in order to extend supplies and reduce the risk of shortages. The 7/10 process has not been active for quite some time. *Id.* at 40, 42 n.9.

560. *Id.* at 40.

consensus.⁵⁶¹ Fourth, tribes could co-create and participate in a distinctly tribes-led forum: Tribal Leaders Forum.⁵⁶² It would serve to facilitate and organize involvement by all interested tribes, as well as to enable information exchange, dialogue aimed at finding common ground, and development of options and recommendations for the new management framework.⁵⁶³ Finally, tribes could participate in issue-specific, place-based, and other collaborative processes that may emerge, as discussed further below.⁵⁶⁴

To operationalize any of these options for tribal participation, basin tribes will need or want assurances that their participation will constitute more than a symbolic gesture—“that it will actually make a difference in the process.”⁵⁶⁵ At the same time, tribes will need to “step forward proactively to demonstrate good faith and a commitment to work together,” underpinned by an “understanding that their interests and views will be considered to the same extent as those of other sovereigns,” and they will have opportunities to influence outcomes.⁵⁶⁶ There is also the capacity issue. Effective tribal participation hinges on it, including adequate “time, staffing, knowledge ... and funding to hire consultants.”⁵⁶⁷ In the final analysis, it is important to keep in mind that each basin tribe is unique and will determine how, if at all, they wish to engage based upon their interests and

561. *Id.*

562. *Id.*

563. During the basinwide workshop convened by WTI in February 2020, participants generally agreed some sort of forum for tribes to build capacity and to facilitate engagement in basinwide policy discussions is an essential step forward. To be most effective, a Tribal Leaders Forum would need to be driven by tribes, with all thirty tribes invited to participate—notwithstanding variation in their interests, knowledge, resources, capacity, and experience. The Tribal Leaders Forum would need to be well-funded and staffed, and it would need access to a robust suite of scientific and technical information. When viewed in connection with the Sovereign Review Team proposal, some participants suggested the Tribal Leaders Forum could select representatives to participate on the Sovereign Review Team, and otherwise convey tribal input and advice to the Sovereign Review Team, as well as providing a mechanism to ensure all tribal needs and interests are adequately represented in the Sovereign Review Team. According to some participants, the Tribal Leaders Forum is one place where tribes that have been more active in basinwide decision-making processes—*e.g.*, Colorado River Indian Tribes and Gila River Indian Community—could share experiences with other tribes to enhance capacity. Some participants wondered whether the Ten Tribes Partnership and the Inter-Tribal Council of Arizona could help launch and facilitate the Tribal Leaders Forum, while other participants suggested it should be convened and facilitated by the Bureau of Reclamation to maximize its legitimacy and credibility, or perhaps by WTI given its demonstrated commitment and capacity. Although not denominated as such, the Tribal Leaders Forum idea is discussed briefly as Option #5 in *id.* at 40.

564. *Id.*

565. *Id.* at 41.

566. *Id.*

567. *Id.* Some basin leaders suggested that one way to demonstrate a commitment to tribes as partners in the new management framework’s development would be to provide funding so tribes can contract for outside expertise and assistance, including but not limited to hydrologists, economists, lawyers, planners, and engineers. Some leaders noted that, as a matter of social justice, there should be some level of funding for tribes in light of the billions of dollars historically spent on projects that have diverted water away from Indian reservations. *Id.* at 43 n.11.

capacity.⁵⁶⁸

Although there is no singular “tribal ask” given the unique needs, interests, and culture of each basin tribe, it is possible to identify general themes in response to the question of “what do tribes want?” out of negotiations over the new management framework.⁵⁶⁹

First, as made abundantly clear by basin leaders, tribes want to have a formative role in the framework’s development. They want to be treated as sovereigns alongside their counterparts: the federal government and basin states. Relationship building is key here. Basin tribes want the federal government to engage in more meaningful, more impactful government-to-government consultation in fulfillment of its trustee role.⁵⁷⁰

Second, big surprise: basin tribes want to use their water rights. And they need funding for construction and management of infrastructure. A host of corollary “asks” fall under this umbrella: (1) completing settlements of unrecognized and unquantified tribal water rights; (2) fully developing quantified but unused or under-used tribal water rights;⁵⁷¹ (3) addressing impacts of future development of tribal water rights on other water users; (4) providing accessible drinking water and sanitation to every person in the basin;⁵⁷² (5) recognizing storage of tribal water as a beneficial use; (6) allowing dedication of unused tribal water to Intentionally Created Surplus or other water conservation measures; (7) resolving issues associated with accounting for tribal water rights under basin states’ apportionments; and (8) developing depletion schedules for basin tribes similar to those completed for the Upper Basin and Lower Basin states in the Interim Guidelines.⁵⁷³

Third, another general theme growing out of the question of “what do tribes want?” from negotiations over the new management framework concerns self-determination. Tribes want to exercise that promise as it has framed federal Indian policy for the past half century.⁵⁷⁴ Along with empowering tribes to promote

568. *Id.* at 41.

569. *Id.*

570. *Id.* at 40.

571. Some basin leaders commented that tribes may be able to support the idea of treating all quantified rights—whether they are currently used or unused—as “used” by definition and thus available for marketing and sharing. One variation on this theme is to develop a method for measuring unused tribal water and then providing tribes with some type of “conservation credit” for not diverting that water. *Id.* at 43 n.13.

572. UNIVERSAL ACCESS EXECUTIVE SUMMARY, *supra* note 509. An estimated 30 percent of people on the Navajo Reservation lack access to running water and must haul water. DIG DEEP & U.S. WATER ALL., CLOSING THE WATER ACCESS GAP IN THE UNITED STATES: A NATIONAL ACTION PLAN 38 (2019) (citing NAVAJO NATION DEP’T OF WATER RES., DRAFT WATER RESOURCES STRATEGY FOR THE NAVAJO NATION 2 (2011)).

573. SENSE OF THE BASIN, *supra* note 460, at 41. The Upper Basin and Lower Basin states’ depletion schedules are set forth in Appendices C and D, respectively, of INTERIM GUIDELINES FEIS, *supra* note 518. This suggestion could build off growth scenarios developed for the Ten Tribes Partnership tribes in chapter 5 of TRIBAL WATER STUDY, *supra* note 19.

574. COHEN’s, *supra* note 179, at 97–113.

economic development, to build governmental infrastructure, to manage natural and cultural resources, to meet health care and educational needs, and to perform other essential functions, the principle of self-determination should be extended unequivocally to tribal water rights. In short, basin tribes should have autonomy. *They* should determine whether they wish to use their water rights for social, economic, cultural, or environmental purposes on their reservations, as well as whether *they* wish to transfer, market, or otherwise share their water rights off those reservations.

4. Stakeholder Engagement & Public Participation

Moving beyond the community of decision-makers, next-generation governance institutions in the Colorado River Basin should provide ample opportunities for participation, learning, dialogue, and problem-solving by the whole community of communities, consistent with the guiding principles above. Nearly every basin leader suggested that “the process” for developing the new management framework “should not and will not revolve around a single table.”⁵⁷⁵ Rather, “the process” should include multiple opportunities for participation by parties whose interests are affected by the framework, as well as by entities engaged in implementing it.⁵⁷⁶ “In short, ‘the’ collaborative process should take the form of a network of networks.”⁵⁷⁷

Beyond the NEPA framework mentioned above, including its provisions for public participation, a network of networks should encompass varied formal and informal processes for stakeholder engagement.⁵⁷⁸ The basic idea here is to create multiple, overlapping opportunities for meaningful participation, to “facilitate the flow of ideas and information across networks via shuttle diplomacy and other methods,” and to seek consensus among the broadest possible coalition of parties.⁵⁷⁹ These objectives can be attained by initially “keeping tables small enough to negotiate agreements,” and subsequently integrating those agreements into a consolidated package of proposals for the new management framework.⁵⁸⁰

A network of networks should start by building on existing processes and forums—e.g., the well-established forum for basin state principals, the Colorado River Sustainability Campaign in the conservation area, etc.⁵⁸¹ There may also be opportunities to create new working groups around specific issues or places.⁵⁸² One

575. SENSE OF THE BASIN, *supra* note 460, at 31.

576. *Id.*

577. *Id.*

578. *Id.*

579. *Id.*

580. *Id.*

581. *The Organization*, COLO. RIVER SUSTAINABILITY CAMPAIGN, <https://www.rivercampaign.org/> (last visited Apr. 10, 2021).

582. SENSE OF THE BASIN, *supra* note 460, at 31.

way to imagine how a network of networks might be composed is to envision a nested system.⁵⁸³ Moving from basinwide to localized scales, the network of networks could encompass a range of options:⁵⁸⁴

- *International dialogue* between the United States and Mexico, convened under the auspices of the IBWC, to negotiate a successor to Minute 323.
- *Interstate dialogue*, convened by basin-state principals, to enable states to exchange information and seek agreements on the new management framework.
- *Tribal Leaders Forum* to provide a unique, distinct space for all thirty tribal sovereigns in the basin to exchange information, to clarify needs and interests, and to reach consensus positions on the new management framework.
- *Upper Basin and Lower Basin forums* to build awareness, understanding, and agreement among states, tribes, and stakeholders within each sub-basin (e.g., the Upper Colorado River Basin Water Forum convened by Colorado Mesa University).⁵⁸⁵
- *State-level forums* to facilitate communication, understanding, and agreement on needs and interests within individual states, including those of tribes, water users, and conservation groups (e.g., Arizona Reconsultation Committee).⁵⁸⁶
- *Issue-specific working groups* to facilitate communication, understanding, and agreement on particular issues (e.g., reservoir operations, water banking and marketing, environmental concerns, tribal water rights, governance, etc.).
- *Place-based working groups* to focus on multiple issues in particular places within or adjacent to the basin (e.g., Colorado River Delta, Salton Sea, Grand Canyon, etc.).
- *Citizen diplomacy* to encourage unaffiliated citizens, conservation groups, universities, “and other interested parties to initiate, convene, and

583. *Id.*

584. *Id.* at 31–32.

585. *Upper Colorado River Basin Water Forum*, COLO. MESA UNIV., <https://www.coloradomesa.edu/water-center/forum/index.html> (last visited Apr. 25, 2021).

586. *Arizona Reconsultation Committee*, ARIZONA DEP’T OF WATER RES., <https://new.azwater.gov/arc> (last visited Apr. 25, 2021).

coordinate forums to explore issues of mutual interest, [to] offer solutions and recommendations to solve problems, and [to] facilitate shuttle diplomacy.”⁵⁸⁷

This network of networks offers rich opportunities for the basin’s community of communities to participate in collaborative decision-making over the new management framework.⁵⁸⁸ Some opportunities are more formal, others more informal.⁵⁸⁹ Some are designed to facilitate information exchange and foster education and learning, while others are designed to provide advice to decision-makers. Still other forums are focused on building agreements, resolving conflicts, and making decisions. Some of the opportunities can and should occur before the formal NEPA process begins, while others can and should occur parallel to, and thereby supplement and complement, the formal NEPA process.⁵⁹⁰

Consistent with the network of networks concept, another option for collaborative problem-solving related to the new management framework would be to create a multi-stakeholder forum similar to the Bureau of Reclamation’s *Moving Forward Effort*.⁵⁹¹ It was designed as a multi-stakeholder collaborative forum for building on next steps from the Basin Study.⁵⁹² Undertaking Phase 1 of its activities from 2013 and 2015, the forum included representatives from the federal government, basin states, tribes, conservation organizations, and agricultural and municipal water users.⁵⁹³ This multi-stakeholder collaborative structure could supplement several options encompassed within the network of networks.⁵⁹⁴

While the network of networks focuses predominantly on opportunities for stakeholder participation in the new management framework’s development (i.e., participation by sovereigns and organized interest groups), it is equally important to consider opportunities for public participation (i.e., participation by more or less unaffiliated citizens in and around the Colorado River Basin).⁵⁹⁵ A couple points are relevant in this space.

As a threshold matter, basin leaders agreed there is a huge need to inform and educate the general public about where their water comes from, as well as

587. SENSE OF THE BASIN, *supra* note 460, at 32.

588. *Id.* at 31.

589. *Id.*

590. *Id.* at 26.

591. *Moving Forward Effort*, BUREAU OF RECLAMATION, <https://www.usbr.gov/lc/region/programs/crbstudy/MovingForward/> (last updated Dec. 10, 2018).

592. *Id.*

593. *Moving Forward Effort, Phase 1*, BUREAU OF RECLAMATION, <https://www.usbr.gov/lc/region/programs/crbstudy/MovingForward/Phase1.html> (last updated Dec. 10, 2018).

594. SENSE OF THE BASIN, *supra* note 460, at 30.

595. *Id.* at 32. To be clear, the citizen-diplomacy component of the network of networks would enable participation by unaffiliated citizens.

issues, options, and trade-offs facing the basin community.⁵⁹⁶ Some leaders suggested there would be value in a targeted “public information and education campaign that is broad, inclusive, and innovative.”⁵⁹⁷

In addition, as far as soliciting input and advice from the public, the formal NEPA process should dovetail with supplementary methods of public participation, including options available to the public before the formal NEPA process begins.⁵⁹⁸ The toolboxes of the International Association for Public Participation⁵⁹⁹ and the National Coalition for Dialogue and Deliberation⁶⁰⁰ are excellent sources for innovative methods that have emerged in recent decades to meaningfully engage members of the public in collaborative decision-making. These methods could be integrated into several options encompassed within the network of networks, including Upper Basin and Lower Basin forums, state-level forums, issue-specific working groups, place-based working groups, and citizen diplomacy.

5. Knowledge & Information

In relation to the new management framework’s development and far beyond, a final yet essential ingredient for next-generation Colorado River governance institutions involves knowledge and information. While it may seem trite, it’s important to begin our foray into this topic by recognizing the general consensus among basin leaders that governance must be based on the best available scientific and technical information.⁶⁰¹

Building on this premise, basin leaders were quick to point out a critical interface.⁶⁰² While there is no shortage of scientific and technical information about the Colorado River system, there *is* a need to ensure the relevance of that information to decision-making processes.⁶⁰³ “What questions need what kind of information?”⁶⁰⁴ How is information integrated into governance?⁶⁰⁵ Some leaders suggested that one way to better integrate science into decision-making processes would be to rely on real-time/actual hydrologic data, rather than forecasting and

596. *Id.*

597. *Id.* The “For the Love of Colorado” water education campaign might serve as a model. Joe Rubino, *New Campaign Implores Water Conservation, ‘For the Love of Colorado,’* DENVER POST (June 20, 2019), <https://www.denverpost.com/2019/06/20/campaign-water-conservation-love-colorado/>.

598. SENSE OF THE BASIN, *supra* note 460, at 32.

599. Welcome, INTERNATIONAL ASSOCIATION FOR PUBLIC PARTICIPATION, <https://www.iap2.org/mpage/Home> (last visited Apr. 25, 2021).

600. Welcome, NATIONAL COALITION FOR DIALOGUE AND DELIBERATION, <https://ncdd.org> (last visited Apr. 25, 2021).

601. SENSE OF THE BASIN, *supra* note 460, at 27.

602. *Id.* at 44.

603. *Id.*

604. *Id.*

605. *Id.* For more on this topic, particularly the historical pattern of ignoring science in Colorado River governance, see generally KUHN & FLECK, *supra* note 255.

modeling, to develop annual operating plans.⁶⁰⁶ Other leaders “suggested that forecasting and modeling are essential” for establishing benchmarks and triggers, as well as for clarifying options and tradeoffs.⁶⁰⁷ Perhaps there is intersectionality versus dissonance here: forecasting and modeling tools should be enhanced to generate more real-time information for planning.⁶⁰⁸ All told, there is general consensus among leaders that it is imperative to align expectations and water management with the basin’s hydrology.⁶⁰⁹

In addition to using the best available scientific and technical information, as well as focusing that information on decision-making processes, another indisputable fact is that Colorado River governance inevitably must occur in a context of uncertainty (*e.g.*, climate change, water development, *etc.*).⁶¹⁰ Once again, there is general consensus among basin leaders that decision-makers and stakeholders should acknowledge this dynamic and strive to make informed decisions based upon what is known, with the expectation of learning and adapting over time.⁶¹¹ Interestingly, some leaders explained how “current and emerging science is expanding the range of uncertainty, making it even more difficult to [reach] consensus on scientific and technical information.”⁶¹² One response to the challenge of navigating uncertainty has been a significant investment in scenario planning, including projecting water availability in different climate-change and water-development scenarios.⁶¹³

Another important set of issues involving scientific and technical information concerns the need to better understand the Colorado River system’s vulnerability to low-probability, high-impact events beyond the scope of normal expectations and current management plans (*e.g.*, megadroughts or extreme floods).⁶¹⁴ Most risks of this sort revolve around extreme hydrological conditions that may stress existing institutions—those addressing water allocation, reservoir operations, biodiversity loss, ecosystem protection and restoration, *etc.*—and otherwise

606. SENSE OF THE BASIN, *supra* note 460, at 44.

607. *Id.*

608. *Id.*

609. *Id.*

610. *Id.*

611. *Id.*

612. *Id.* at 45.

613. *Id.* at 44. The Basin Study and Tribal Water Study both exemplify such work. STUDY REPORT, *supra* note 376, at SR-12 to SR-36; TRIBAL WATER STUDY, *supra* note 19, at 5.11-4 to 5.11-6; WANG ET AL., CTR. FOR COLO. RIVER STUD., UTAH STATE UNIV., MANAGING THE COLORADO RIVER FOR AN UNCERTAIN FUTURE (2020), https://qcnr.usu.edu/coloradoriver/files/CCRS_White_Paper_3.pdf; *Colorado River Conversations Project*, CTR. FOR CLIMATE ADAPTATION SCI. & SOL., UNIV. OF ARIZ., <https://ccass.arizona.edu/colorado-river-conversations-project> (last visited April 25, 2021); *See also* SALEHABADI ET AL., *supra* note 504.

614. SENSE OF THE BASIN, *supra* note 460, at 45. For more on the role of risk in Colorado River management, *see generally* *Thinking About Risk on the Colorado River*, COLO. RIVER RSCH. GRP. (2019), https://www.coloradoriverresearchgroup.org/uploads/4/2/3/6/42362959/crrg_thinking_about_risk.pdf.

compromise the socio-ecological system's stability.⁶¹⁵ Several basin leaders explained that the likelihood of such events occurring is increasing.⁶¹⁶ Thus, the new management framework must "consider a range of potential futures" that may stress the river system and utilize "the best available information to frame alternative scenarios and management strategies."⁶¹⁷

Several additional issues related to knowledge and information should be considered in the development of next-generation Colorado River governance institutions—the new management framework and otherwise.⁶¹⁸ These issues include the following:

- ☐ Clarifying, understanding, and translating tribal spiritual and cultural values related to the river system into terms that are comprehensible and useful to water managers.
- ☐ Integrating western science, traditional knowledge, and cultural values into planning and decision-making processes involving the river system.
- ☐ Articulating clear, specific ecological goals for different segments of the river system (*e.g.*, Grand Canyon, Colorado River Delta, etc.).
- ☐ Assessing and reconciling trade-offs between water-supply and ecological goals.
- ☐ Coordinating the wealth of information and expertise related to the river system (*e.g.*, Bureau of Reclamation, U.S. Geological Survey, state water resource agencies, university-based centers and experts, environmental organizations, etc.).
- ☐ Building capacity and sharing knowledge and information across the basin's community of communities.
- ☐ Communicating scientific and technical information to decision-makers and stakeholders.
- ☐ Resolving disagreements among scientists from different disciplines or fields.
- ☐ Enhancing scientific and technical capacity to facilitate adaptive

⁶¹⁵ SENSE OF THE BASIN, *supra* note 460, at 45.

⁶¹⁶ *Id.*

⁶¹⁷ *Id.*

⁶¹⁸ *Id.* at 44.

management.⁶¹⁹

In response to this list, basin leaders offered several prescriptions generally involving building existing knowledge,⁶²⁰ enhancing tribal capacity,⁶²¹ devising strategies for integrating western science and traditional tribal values and knowledge,⁶²² and creating a system for ongoing learning and adaptive management.⁶²³ These prescriptions were synthesized into a strawman proposal presented at WTI's basinwide workshop in February 2020 that called for something novel. The Secretary of the Interior should create, or should encourage the creation of, a Colorado River Science and Culture Open Forum ("Open Forum"). It would provide a venue for (1) exploring scientific and technical issues facing the basin; (2) enhancing public awareness of those issues; (3) moving beyond a science agenda focused largely on water-supply concerns to a more holistic understanding of the river system based upon western science and traditional tribal values and knowledge; (4) integrating findings and conclusions of the Open Forum into decision-making processes related to the new management framework; and (5) surfacing the broadest possible range of policy alternatives for the new management framework's design, including "third rail" options unlikely to surface through more conventional processes.⁶²⁴

The Open Forum proposal received a mixed review.⁶²⁵ As an overarching

619. *Id.* at 44–46. Some basin leaders suggested this issue is less about enhancing scientific and technical capacity per se, and more about integrating it into planning and decision-making systems that govern the river system. *Id.* at 46. Part of the challenge is to develop a flexible management framework with the expectation that its implementation will vary in sync with the basin's hydrology (*e.g.*, reservoir operations). *Id.*

620. Examples include supplementing data from the Basin Study and Tribal Water Study with information generated by entities such as the Center for Colorado River Studies at Utah State University, the Western Water Assessment at the University of Colorado, the University of Arizona's Center for Climate Adaptation Science & Solutions, and the Colorado River Research Group. *Id.* at 47.

621. Several basin leaders suggested the Bureau of Reclamation should provide tribes with the same type and level of technical support in relation to the new management framework's development as the agency did for the basin states with the Interim Guidelines' development. *Id.* This approach would follow on the heels of the technical support provided by the Bureau for the Tribal Water Study. *Id.*

622. An important aspect of this prescription involves translating tribal spiritual and cultural values into terms that can be used by water managers. *Id.* at 48. To accomplish this translation, some basin leaders suggested experimenting with innovative methods of engagement, such as "ethical space." *Id.* The intent here is to respect and accommodate differences between traditional tribal values and knowledge and western culture/science. *Id.* Many leaders commented that this task will be an important aspect of designing any collaborative process going forward, and that it involves values and vision as much as scientific and technical information. *Id.* The goal, according to some leaders, is to move beyond a science agenda dictated largely by federal and state officials to a more holistic understanding of the river system based on western science and traditional tribal values and knowledge. *Id.*

623. Some basin leaders favored creating a formal system or entity to facilitate ongoing learning and adaptive management. *Id.* They identified as potential models the U.S. Geological Survey's Grand Canyon Monitoring and Research Center and the Public Policy Institute of California. *Id.*

624. *Id.* at 62–63.

625. *Id.* at 12–13.

matter, workshop participants observed that values and policy preferences drive data generation and modeling.⁶²⁶ This interface led some participants to pose the question of “how should we decide what we need to know, and how should we go about gathering that information?”⁶²⁷ Participants suggested that examining assumptions about what type of data are needed would not only foster a broader conversation, but also influence decision-making over the new management framework.⁶²⁸ For example, what would happen if we were to assume all tribal water rights will be quantified and fully developed across the Colorado River Basin? Or what would happen if we were to prescribe ecological goals for different segments of the river system? Should we be modeling for short-term water supply, long-term sustainability, or both?

Along these lines, some workshop participants observed that the new management framework should both consider and reflect a broader, more inclusive set of values and interests than water managers historically have taken into account—a viewpoint consistent with the sustainability resolution above.⁶²⁹ In particular, some participants explained that the Colorado River Compact talks about “no impairment,” and that this provision historically has focused solely on water supply.⁶³⁰ In developing the new management framework, these participants advocated for a more liberal construction, extending the provision to issues such as universal access to clean water and protection of ecological values across the basin.⁶³¹

To achieve these objectives, workshop participants generally agreed it is essential to better integrate traditional tribal values and knowledge into the new management framework, with such integration occurring as early as possible in the negotiations.⁶³² Underlying this recommendation is not only a desire to broaden the new management framework’s purpose, scope, and aspirations, but also a recognition of the importance of respecting different types of knowledge (traditional knowledge and western science) and different values (tribal cultural, environmental, and spiritual values as well as the value of water supply). All parties should have access to the same body of information, realizing that this access will not necessarily correlate with uniform agreement on the interpretation and meaning of that information.

Some workshop participants observed that integrating traditional tribal values and knowledge into the new management framework is easier said than

626. *Id.* at 12.

627. *Id.*

628. *Id.*

629. POLICY BRIEF #3, *supra* note 477, at 5.

630. Compact, *supra* note 24, at Art. VIII (“Present perfected rights to the beneficial use of waters of the Colorado River System are unimpaired by this compact.”).

631. SENSE OF THE BASIN, *supra* note 460, at 12.

632. *Id.*

done.⁶³³ A couple concerns are notable. First, what is the best way to gather information about traditional tribal values and knowledge, and how can it be done with respect for information tribes may not wish to share for cultural and other reasons? One path forward, according to some participants, would be to convene listening sessions with tribal and other leaders, reflecting WTI's process of conducting interviews and convening workshops to prepare *Toward a Sense of the Basin*.⁶³⁴ Second, how can tribal cultural and spiritual values be translated into terms (or parameters) suitable for modelling work, keeping in mind that relativism should exist between the value added by western science and traditional tribal values and knowledge?⁶³⁵ In short, how can information of this sort be made actionable? Although the Bureau of Reclamation has expressed willingness to explore how to package this information for translation into the Colorado River Simulation System,⁶³⁶ some participants suggested a new model and/or decision-making framework may be needed that better accommodates a broader range of values and aspirations.

Circling back to the Open Forum proposal, some workshop participants wondered whether creating this entity would be the best way to achieve the objectives above.⁶³⁷ They suggested new platforms are not needed to do this type of work, and the entity would distract from other planning and problem-solving forums.⁶³⁸ Conversely, other participants indicated there is a need for more independent scientific and technical review of alternative proposals for the new management framework, and this type of review should be informed not only by western science, but also by traditional tribal values and knowledge.⁶³⁹ Some participants, however, raised concerns about how the Open Forum's work would be considered and/or integrated into the decision-making process.⁶⁴⁰ Perhaps the best option to address this challenge, according to some participants, would be for the Secretary of the Interior to authorize the Open Forum's creation, thereby

633. *Id.*

634. *SENSE OF THE BASIN*, *supra* note 460.

635. For an excellent introduction to bridging cultural differences, see generally PETER S. ADLER & JULIANA E. BIRKHOFF, THE NATIONAL POLICY CONSENSUS CENTER, BUILDING TRUST: WHEN KNOWLEDGE FROM "HERE" MEETS KNOWLEDGE FROM "AWAY" (2002), https://www.doi.gov/sites/doi.gov/files/uploads/building_trust_adler_birkhoff.pdf. For a review of innovative methods to blend different ways of knowing and learning, see ALBERTA ENERGY REGULATOR, VOICES OF UNDERSTANDING: LOOKING THROUGH THE WINDOW (2017), https://static.aer.ca/prd/documents/about-us/VoiceOfUnderstanding_Report.pdf; Willie Ermine, *The Ethical Space of Engagement*, 6 INDIGENOUS L. J. 193 (2007).

636. For a basic description of this modeling system, see *General Modeling Information*, BUREAU OF RECLAMATION, <https://www.usbr.gov/lc/region/g4000/riverops/model-info-APR2018.html> (last visited Mar. 27, 2021).

637. *SENSE OF THE BASIN*, *supra* note 460, at 13.

638. *Id.*

639. *Id.*

640. *Id.*

establishing its visibility, legitimacy, and credibility.⁶⁴¹

Finally, many workshop participants highlighted the need to ensure adequate funding and staffing for the Open Forum, as well as access to relevant information.⁶⁴² Basin tribes (and other parties) most likely would need time, money, expertise, and other resources to build capacity for effective participation in the forum. It would also require expertise to translate and communicate technical information across the basin's community of communities.

And that brings us back to what animates this lengthy discussion of the new management framework and next-generation Colorado River governance writ large. . . .

V. CONCLUSION

Community. That concept is what this Article's been about. It's what Colorado River governance should be about—the new management framework and beyond. And it's much more than a concept. Bet your life on it.

John Wesley Powell's proposed watershed commonwealths fell short of community—at least from a twenty-first-century vantage.⁶⁴³ Powell *saw* connections—perhaps his mind's strongest tendency—but his vision was tethered to historical context,⁶⁴⁴ as all of ours are. So while he floated a river system flush with life—animate—initially in 1869 and again in 1871 and 1872,⁶⁴⁵ only one species was alive in his advocacy about Western water.⁶⁴⁶ And while that advocacy echoed the Arid Region's Spanish and Mexican past—embracing communitarian water governance—Powell's commonwealths weren't for those peoples.⁶⁴⁷ Nor were they for Native communities who intrigued Powell for so much of his life⁶⁴⁸—communities whose connections to the river system have been described with the perfect word: umbilical.⁶⁴⁹

641. *Id.*

642. *Id.*

643. Powell, *supra* note 1, at 114.

644. Louis Warren & Rachel St. John, *Strange Resurrection*, in *VISION & PLACE*, *supra* note 12, at 24–25 (“Powell was . . . of course, a man of his time and place, constrained by the biases and beliefs of a culture that assumed natural resources could best be used to promote agrarian development, that presumed the dominion of white men over Native people and the natural world alike, and that imbibed a blind faith in progress that would lead mostly to intense disappointment.”).

645. JOHN WESLEY POWELL, *EXPLORATION OF THE COLORADO RIVER OF THE WEST AND ITS TRIBUTARIES* (1875).

646. Two publications are foremost in this advocacy: Powell, *supra* note 11; JOHN WESLEY POWELL, *REPORT ON THE LANDS OF THE ARID REGION OF THE UNITED STATES* (1878).

647. Powell, *supra* note 1, at 112.

648. “Powell was instrumental in establishing the Smithsonian Institution's Bureau of Ethnology—later renamed the Bureau of American Ethnology—including serving as its first director (1879–1902).” *VISION & PLACE*, *supra* note 12, at xx.

649. As described by Zuni tribal member Jim Enote: “The Zuni River and Little Colorado River are like umbilical cords, connecting us back to the place where we emerged.” *The Voices of Grand Canyon*, *supra* note 54.

Have you ever felt *invisible*? Maybe some readers do now. If so, you're not alone. Take a look at this piece of Patty Limerick's famous writing about Western history:

The cast of characters who inherit the West's complex past is as diverse as ever. As Western dilemmas recur, we wish we knew more not only about the place but also about each other. It is a disturbing element of continuity in Western history that we have not ceased to be strangers. . . . One would be happy to consign this pattern of thought to the old frontier West, but the quarantine would not hold. When Anglo-Americans look across the Mexican border or into an Indian Reservation, they are more likely to see stereotypes than recognizable individuals or particular groups; the same distortion of vision no doubt works the other way too. . . . Indians, Hispanics, Asians, blacks, Anglos, businesspeople, workers, politicians, bureaucrats, natives, and newcomers, we share the same region and its history, but we wait to be introduced.⁶⁵⁰

Any hand this Article may have in making such introductions would be cause for celebration. The Colorado River Basin is a community of communities. It cannot and should not be a community of *strangers*. That's not community at all. By the same token, Colorado River governance cannot and should not occur among *strangers*. That's not governance at all. "What really is the key to success are relationships. You can't really work closely with folks and on very complex contentious issues if you don't know about each other and respect each other. I know it sounds simple. Of course, it's not, in fact."⁶⁵¹ That wisdom comes from Terry Fulp, former Lower Colorado Regional Director for the Bureau of Reclamation,⁶⁵² and possibly a kindred spirit to Patty Limerick. The next several years present an opportunity for relationship building that is exceptional in our lifetimes. Who knows when such a moment will come again. It's time to get to know each other. It's time to give and earn respect. And in these "simple" ways, it's time to do what John Wesley Powell envisioned for his watershed commonwealths, but in twenty-first-century form: create institutions shaped by our connections.

650. PATRICIA NELSON LIMERICK, *THE LEGACY OF CONQUEST: THE UNBROKEN PAST OF THE AMERICAN WEST* 349 (1987).

651. Gary Pitzer, *A Colorado River Leader Who Brokered Key Pacts to Aid West's Vital Water Artery Assesses His Legacy and the River's Future*, WESTERN WATER (Nov. 6, 2020), <https://www.watereducation.org/western-water/colorado-river-leader-who-brokered-key-pacts-aid-west-vital-water-artery-assesses-his>.

652. *Id.*

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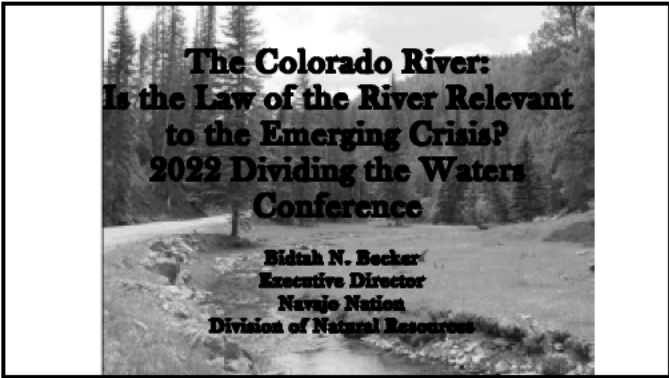
Director, Division of Natural Resources, Navajo Nation

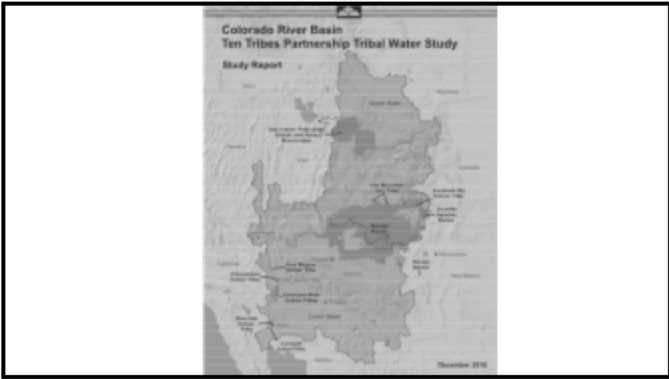


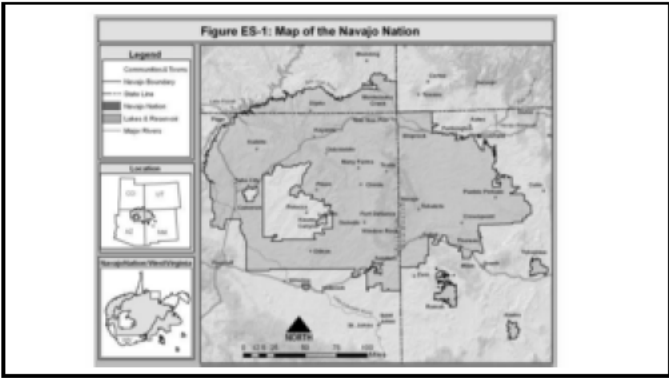
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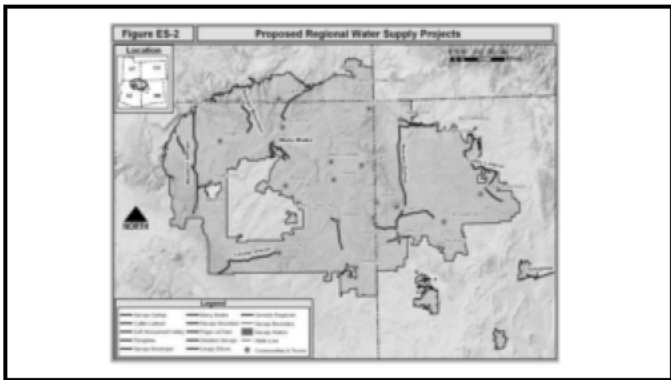
Dividing
the Waters











AZ v NN (formerly NN v. USDOJ originally filed in 2003, now on 3rd amended complaints later)

UNITED STATES DEPT. OF THE
INTERIOR PETITION FOR CERTIORARI
UNITED STATES SUPREME COURT
QUESTION PRESENTED

Whether the federal government owes the Navajo Nation an affirmative, judicially enforceable fiduciary duty to assess and address the Navajo Nation's need for water from particular sources, in the absence of any substantive source of law that expressly establishes such a duty.

ARIZONA INTERVIEWER QUESTIONS PRESENTED

The Consolidated Decree in *Arizona v. California*, 547 U.S. 150 (2006), apportions the mainstream of the Colorado River in the Lower Basin ("LCB") among three states, decrees rights to the LCB for three Indian Reservations (but not the Navajo Reservation) and various other entities, and prescribes how the Secretary of the Interior ("Secretary") shall operate the mainstream dams in satisfaction of the decrees and water delivery contracts entered under the Boulder Canyon Project Act ("BCPA"). The Court retained exclusive jurisdiction "for the purpose of any order, direction, or modification of this decree, or any supplementary decree, that may at any time be deemed proper in relation to the subject matter in controversy." Id. at 166-67 (emphasis added).

The United States "assumes that the responsibility for the water it expressly accepts those responsibilities by statute," treaty, or regulation. U.S. v. Arizona Appellate Nation, 546 U.S. 127-77 (2015). The federal trustee with the Navajo Nation ("Nation") does not require the Secretary to develop a plan to secure water for the Nation; and they do not address water at all. The doctrine of implied rights to water in *Winters v. United States*, 308 U.S. 207 (1934) ("Winters Doctrine") cannot justify imposing such a fiduciary duty on the Secretary.

The questions presented are:

1. Does the Ninth Circuit Opinion, allowing the Nation to proceed with a claim to enjoin the Secretary to develop a plan to meet the Nation's water needs and manage the mainstream of the LCB so as not to interfere with that plan, infringe upon this Court's retained and exclusive jurisdiction over the allocation of water from the LCB mainstream in *Arizona v. California*?
2. Can the Nation state a cognizable claim for breach of trust consistent with the Court's holdings in *Winters* based solely on unquantified implied rights to water under the Winters Doctrine?

NAVAJO NATION BRIEF IN OPPOSITION TO UNITED STATES

In 1964, the Court issued a decree partially apportioning the waters of the Colorado River among several states and five Indian tribes, not including the Navajo Nation, represented by the United States as trustee. *Arizona v. California*, 370 U.S. 293, 34-245 (1964). The United States both failed to assert a claim to the Colorado mainstream on behalf of the Nation and successfully represented the Nation's attempt to assert such a claim on its own behalf. The Court thus did not adjudicate the Nation's rights to the Colorado.

The Court retained jurisdiction to modify the decree, but also understood that the decree "shall not affect... [the] rights or priorities, except as specifically provided in made laws, of any Indian Reservation." Id. at 342-43. The Court has modified the decree since 1964, but the decree in effect today contains those same provisions. *Arizona v. California*, 547 U.S. 150, 166-67 (2006).

The questions presented are:

1. Whether the lower courts had jurisdiction over the Navajo Nation's breach-of-trust claim seeking an order requiring the United States to assess and develop a plan to meet the Nation's water needs, but not a judicial modification of the Nation's rights to Colorado River water, or whether this Court has exclusive jurisdiction under the Consolidated Decree.
2. Whether, given the United States' promise to provide the Navajo Nation sufficient water by enacting into the statutes establishing the Navajo Reservation, coupled with the government's treaty, executive, statutory and regulatory control over the Colorado River, the United States owes the Navajo Nation a fiduciary duty to assess the Nation's water needs and develop a plan to meet them.



The End



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Dividing
the Waters