



1 | Introduction

In 2012, the Bureau of Reclamation (Reclamation), in partnership with the seven Colorado River Basin States¹ (Basin States) and in collaboration with a wide spectrum of Colorado River Basin (Basin) stakeholders, published the most comprehensive study of future Basin water supply and demand ever undertaken. The Colorado River Basin Water Supply and Demand Study (Basin Study) defined current and future imbalances in water supply and demand in the Basin over the next 50 years and developed and analyzed options and strategies to resolve those imbalances. The Basin Study confirmed that, in the absence of timely action, there are likely to be significant shortfalls between projected water supplies and demands in the Basin in coming decades that are likely to affect each sector (for example, agricultural, municipal, industrial, and environmental) dependent on the Colorado River and its tributaries. The Basin Study also confirmed that a wide range of solutions are needed to mitigate and adapt to such shortfalls (Reclamation, 2012a).

In response to the findings of the Basin Study, in 2014, Reclamation's Upper and Lower Colorado Regions, in collaboration with member tribes of the Ten Tribes Partnership² (Partnership Tribes), undertook the Colorado River Basin Ten Tribes Partnership Tribal Water Study (Tribal Water Study). The Tribal Water Study built on the technical foundation of the Basin Study and advanced critical information beyond the limited assessment of tribal water in the Basin Study. In recognition of the importance of bringing tribal³ perspectives to bear in addressing Colorado River planning and management challenges, Reclamation and the Ten Tribes Partnership committed to completion of the Tribal Water Study as documented in the *Agreement Regarding the Importance of the Colorado River Basin Tribal Water Study* provided in *Appendix 1A, Plan of Study*.

The Colorado River Basin Tribes Partnership, also known as the Ten Tribes Partnership (Partnership), is an organization formed in 1992 by ten federally recognized tribes with federal Indian reserved water rights in the Colorado River or its tributaries (Figure 1-A). Not all federally recognized tribes in the Basin are members of the Partnership. Partnership Tribes have reserved water rights, including unresolved claims, to divert nearly 2.8 million acre-feet of water per year from the Colorado River and its tributaries.

**Colorado River Ten Tribes Partnership
Vision Statement**

Water is life. Water is the giver and sustainer of life. Water is a sacred and spiritual element to the Tribes of the Partnership. The Creator instilled in the First Peoples the responsibility of protecting the delicate, beautiful balance of Mother Earth for the benefit of all living creatures. The Partnership will embrace and own the stewardship of the Colorado River and lead from a spiritual mandate to ensure that this sacred water will always be protected, available and sufficient.

¹ Arizona, California, Colorado, Nevada, New Mexico, Utah, and Wyoming

² Chemehuevi Indian Tribe, Cocopah Indian Tribe, Colorado River Indian Tribes, Fort Mojave Indian Tribe, Jicarilla Apache Nation, Navajo Nation, Quechan Indian Tribe, Southern Ute Indian Tribe, Ute Indian Tribe, Ute Mountain Ute Tribe

³ For purposes of the Study, "tribal" generally refers to the member tribes of the Ten Tribes Partnership, unless the context expresses otherwise.

FIGURE 1-A
Map of the Colorado River Basin Showing Reservations of the Members of the Ten Tribes Partnership



The United States has a trust responsibility to protect federal Indian reserved water rights. Each tribe's water rights are unique; the information provided in this report is not intended to provide an interpretation of the water rights of any tribe or to establish federal policy related to federal Indian reserved water rights.

This report provides the outcomes of Tribal Water Study efforts conducted between January 2014 and November 2017. Information in this report was developed and written jointly by Reclamation and the Partnership Tribes. Both Reclamation and the Partnership Tribes went to great effort to present information that is accurate and descriptive of the views of the Partnership Tribes. Neither the United States nor the Partnership Tribes are bound or foreclosed by the views stated in this report. This report consists of the following chapters:

- Chapter 1 – Introduction
- Chapter 2 – Background on Federal Indian Reserved Water Rights
- Chapter 3 – The Tribes of the Ten Tribes Partnership
- Chapter 4 – Methodology for Assessing Current Tribal Water Use and Projected Future Water Development
- Chapter 5 – Assessment of Current Tribal Water Use and Projected Future Water Development
- Chapter 6 – Assessment of System Effects Resulting from Development of Tribal Water
- Chapter 7 – Challenges and Opportunities Related to Development of Tribal Water
- Chapter 8 – Study Limitations
- Chapter 9 – Future Considerations and Next Steps

1.0 Overview of Colorado River Basin

Today, between 35 and 40 million people in the seven Basin States rely on the Colorado River and its tributaries for some, if not all, of their municipal water needs. These same water sources irrigate nearly 4.5 million acres of land in the Basin and the adjacent areas that receive Colorado River water, generating many billions of dollars a year in agricultural and economic benefits (Reclamation, 2015). The Colorado River and its tributaries are essential physical, economic, and cultural resources to all of the federally recognized tribes in the Basin (see *Appendix 1B, Federally Recognized Tribes in the Colorado River Basin*). In addition, the Colorado River is vital to the United Mexican States (Mexico).

The Colorado River and its tributaries provide habitat for a wide range of species, including several federally endangered species, and flows through seven national wildlife refuges and 11 National Park Service (NPS) units⁴. Throughout the Basin, the Colorado River and its tributaries provide a range of recreational opportunities such as boating, fishing, and hiking, all of which significantly benefit regional economies. Hydropower facilities in the Basin can supply more than 4,200 megawatts of vitally important electrical capacity to assist in meeting the power needs of western states.

Total consumptive use and loss in the Basin has averaged approximately 15 million acre-feet per year (MAFY)⁵ over the past decade. Agriculture is the dominant use of Colorado River water,

⁴ While there are more NPS units within the Basin, 11 are included in the NPS' Colorado River Program.

⁵ Basin-wide consumptive use and losses estimated over the period 2003 to 2012, including the 1944 Treaty delivery to Mexico, reservoir evaporation, and other losses due to native vegetation and operational inefficiencies.

with approximately 70 percent of total Colorado River water used to support agriculture. Of the total consumptive use, 40 percent is exported outside the Basin's hydrologic boundaries for use in adjacent areas, including major metropolitan areas located outside the Basin's hydrologic boundaries that receive Colorado River water: Albuquerque, Denver, Los Angeles, Salt Lake City, and San Diego.

The Colorado River System is administered in accordance with the Law of the River⁶ and, of particular relevance to the Tribal Water Study, the federal Indian reserved water rights doctrine. Apportioned water in the Basin exceeds the average long-term (1906 to 2015) historical natural flow of approximately 16.1 MAFY. Up to this point, the imbalance has been managed, and all requested deliveries were met in the Lower Basin as a result of the considerable amount of reservoir storage capacity in the System (approximately 60 MAF or nearly four years of average natural flow of the river). This is due in part to the fact that tribes are still developing into their water rights. Another factor is that Upper Basin States are still developing into their apportionments. In addition, some of the Lower Basin States have been relying on unused tribal water. Finally, Basin States are continuing to reduce their demand for Colorado River water.

Drought conditions have been experienced in the Basin since 2000. Although Basin inflow in 2017 was above average, it was one of only four years with above average inflow since 2000. The average inflow over this 19-year period is approximately 15 percent below the long-term average. The Colorado River reservoir System was near full at the start of this drought but declined to approximately 50 percent capacity in the first five years, and has continued to hover around 50 percent full over the past 12 years. The duration of this ongoing, extended drought is unknown. This uncertainty coupled with a marked decline in System storage poses significant challenges to Basin water users.

Over the past twenty years, collaboration between Reclamation, federally recognized tribes, the Basin States, and others has resulted in significant success in collaboratively addressing water resources challenges across the Basin. The Tribal Water Study is an important next step in the understanding of Colorado River uncertainties and the exploration of opportunities that provide a wide-range of benefits to both Partnership Tribes and water users to help meet the significant challenges ahead.

2.0 Study Objectives and Approach

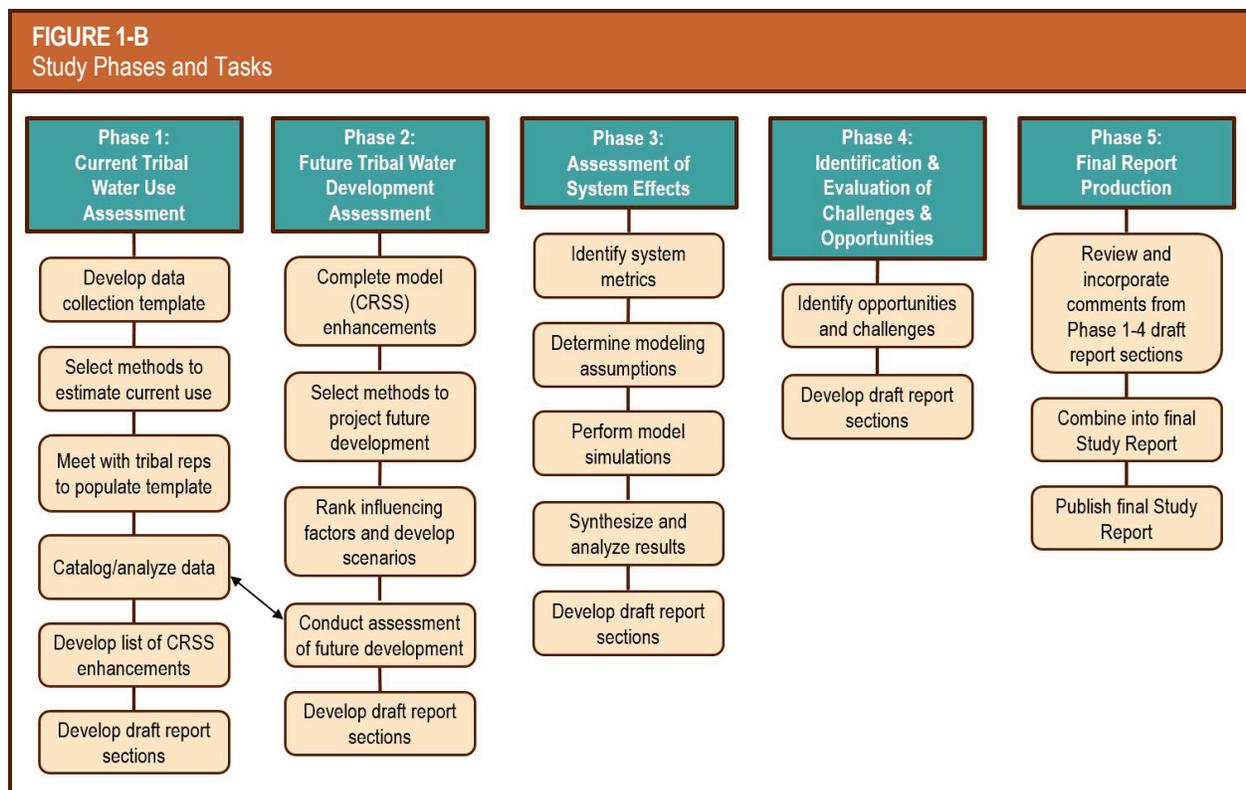
The *Plan of Study*, provided in Appendix 1A, states that the purpose of the Tribal Water Study is to conduct a comprehensive study that would assess, for Partnership Tribes, their tribal water supplies, document current tribal water use on Partnership Tribe Reservations, project future development of tribal water, and identify tribal challenges and opportunities associated with the development of tribal water considering the future projected water supply and demand imbalances documented in the Basin Study. Specific objectives of the Study include:

- Improve the understanding of the role of tribal water throughout the Colorado River System using existing data

⁶ The treaties, compacts, decrees, statutes, regulations, contracts and other legal documents and agreements applicable to the allocation, appropriation, development, exportation and management of the waters of the Colorado River Basin are often collectively referred to as the Law of the River. There is no single, universally agreed upon definition of the Law of the River, but it is useful as a shorthand reference to describe this longstanding and complex body of legal agreements governing the Colorado River.

- Enhance the Colorado River Simulation System (CRSS) to improve its simulation of tribal water use
- Characterize current tribal water use by each Partnership Tribe
- Characterize a range of future tribal water development for each Partnership Tribe
- Identify potential future effects to specific users, or groups of users, presently relying on unused tribal water
- Identify tribal water development challenges both specific to Partnership Tribes and in general Basin-wide
- Identify opportunities for Partnership Tribes that can help reduce future uncertainty and future water imbalances

The Tribal Water Study was conducted in four major phases: 1) Current Tribal Water Use Assessment; 2) Future Tribal Water Development Assessment; 3) Assessment of System Effects Resulting from the Development of Tribal Water; and 4) Identification and Evaluation of Challenges and Opportunities Related to the Development of Tribal Water. Figure 1-B illustrates these phases and some of their inter-relationships. Although the Tribal Water Study identified potential legal and policy issues related to tribal water development and potential opportunities related to the future development of tribal water and future Colorado River uncertainties, the Study viewed tribal water in the context of the current Law of the River.



2.1 Study Organization

As envisioned by the *Plan of Study*, a Study Team led and was responsible for the overall direction and management of the Tribal Water Study. Members of the Study Team provided the expertise, experience, and knowledge that related to the Tribal Water Study's scope and

objectives. Study Team members included the members of the Partnership’s Legal/Technical Committee and designated Reclamation staff from the Upper Colorado and Lower Colorado Regions. Study Team members were responsible for communicating the Tribal Water Study’s progress and issues to, and receiving input from, their respective Partnership Tribes and organizations. Members of the Study Team are listed in *Appendix 1C – Study Team Members*.