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Native American Water Rights in the Colorado River Basin

As noted by Getches et al. (2011), the allocation of water rights in the semi-arid western United States is "perhaps the overriding natural resource issue" in this area (p. 766). A responsibility to account for Native American water rights adds additional layers of complexity to an already complicated allocation process. In the Colorado River Basin, there are 29 federally recognized tribes who hold quantified and unquantified rights to more than 2.9 million acre feet (maf) of water each year (USBR 2012b, 2018) (see Figure 1). That this estimate represents a substantial allotment of the annual Colorado River discharge is an important reason why water managers in the Colorado River Basin (CRB) should prioritize understanding Native American water rights. After providing a brief introduction to Native American water rights[1], this paper will summarize the current water rights of the Tribes in the Colorado River Basin before discussing possible future trends of those rights.

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Native American Water Rights Primer

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The 1908 Supreme Court decision in the *US v. Winters* case is arguably one of the most important legal precedents related to Native American water rights. The case settled a dispute between the Gros Ventre and Assiniboine Tribes of the Fort Belknap Reservation in Montana and non-Indian water users upstream. Fort Belknap was established in 1888[2], before the influx of non-Native settlers to the area, which started around 1895. The federal government and the Tribes planned an irrigation project using the Milk River, which serves as the northern boundary of the Reservation. However, non-Native users upstream (including Henry Winter) were at times diverting so much water from the river that there was not enough water remaining in the channel for the irrigation project. The government sued on behalf of the Tribes and won the case at every level: the Montana State Court, the Ninth Circuit Court of Appeals, and the Supreme Court of the United States all found that the tribes had a senior right to use water from the Milk River that dated to the establishment of the reservation[3]. In the Western United States, where most governments have adopted the "first in time, first in right" doctrine of prior appropriation[4],

[1] It is important to recognize the "water rights" system as a colonial ideology that does not naturally address how Native peoples relate to water as more than just a commodity or resource to be allocated. However, the water rights system currently is the dominant system for understanding how these shared resources are distributed among different users.

[2] This reservation is what remains of an area of land originally reserved by the US Congress in 1874 for several tribes: according to the official Supreme Court opinion in *US v. Winters*, these tribes were the Gros Ventre, Piegan, Blood, Blackfeet, and River Crow Indians. According to the official website of the Fort Belknap Indian Community, the Reservation is homeland to the Gros Ventre and Assiniboine (Nakoda) Tribes. (https://ftbelknap.org/)

[3] Most people recognize the date of reservation establishment as the priority date for *Winters* rights, however there is also recognition of Indian usage of water dating to "time immemorial" and some tribes will actually have water rights with multiple priority dates (Pevar 2012). See the Ninth Circuit Court of Appeals decision in *United States v. Adair* (1983).

[4] The doctrine of prior appropriation was not universally applied and there were many disputes. Around the same time as the *Winters* decision, the SCOTUS determined in *Kansas v. Colorado* (1907) that the states were able to decide for themselves if they wanted to apply the doctrine of prior appropriation or a competing approach (the riparian doctrine) in regulating water rights disputes. (Getches et al. 2011, p. 770)

the fact that *Winters* rights have a priority date of when the reservation was established means that *Winters* rights often are senior to non-Native water appropriations.

Other legal cases regarding water rights allocations have relied upon the precedent set by *Winters* to set their own precedent. *Arizona v. California* (1963) is one such landmark case. This case started because Arizona needed to quantify its share of the Colorado River to get federal money to build the Central Arizona Project (CAP). The state sued California in 1952, and the other Lower Basin states were added later. In addition to these parties, the Fort Mojave, Chemehuevi, Colorado River, Quechan, and Cocopah Indian Reservations asserted their rights to some of the water[5]. The Court referred the case to a Special Master to adjudicate the water rights dispute. Following an extensive trial and subsequent report by the Special Master, Arizona challenged several of the report findings, including some issues related to tribal water rights. Regarding the rights of the Native American tribes in the case, the Supreme Court confirmed that the *Winters* decision applies and agreed with the Special Master that "the quantity of water intended to be reserved…was intended to satisfy the future as well as the present needs of the Indian Reservations."

The *Winters* decision has been applied, analyzed, and written about so extensively that a full "*Winters* doctrine" has developed out of the case law. Pevar (2012, p. 207) summarizes the doctrine with five basic principles[6]:

1) When the federal government sets aside land in a reserve they are also reserving the water tied to the land. These "impliedly reserved" waters apply to lands reserved for any purpose (for example, an Indian reservation, a national park, or a national forest).

2) Enough water is impliedly reserved to fulfill the purposes of those reserved lands[7];

3) Congress intended for Indian reservations to be habitable and productive, and so it intended there to be enough water to achieve that goal, both when the reservation was established and into the future;

4) *Winters* rights apply to federally reserved lands regardless of the mechanism by which they were reserved (meaning, lands reserved by Executive Order have the same water rights as lands reserved by Congress)[8]; and

[5] As noted by Colby et al. (2005) in their Chapter 2 endnotes, there were other tribes in this region with potential claims to some fraction of the Colorado River flow, but they were not part of the adjudication in this case.

[6] In addition to these five basic principles, it is worth noting that *Winters* rights extend to groundwater, per the *Cappaert v. United States* (1976) decision from the US Supreme Court. Furthermore, the US Supreme Court recently declined to hear a case related to application of *Winters* rights to groundwater (*Desert Water Agency v. Agua Caliente Band of Cahuilla Indians*, cert. denied Nov. 27, 2017), effectively confirming the *Cappaert* decision.

[7] The Arizona Supreme Court in *In re the General Adjudication of All Rights to Use Water in the Gila River System and Source* (2001) recognized that enough water should be awarded to tribes so that they can "achieve the twin goals of Indian self-determination and economic self-sufficiency".

[8] This is an important element of the *Winters* doctrine when it is applied to Native American water rights. Many Indian Reservations were established by Executive Order, and there have been multiple court cases in which non-Native parties have claimed that those reservations don't have the same rights as reservations set aside by Congress.

5) Though the federal government has a trust responsibility to protect tribal *Winters* rights, Native American tribes are the beneficial users of their *Winters* rights and can file legal claims to protect them.

One weakness of the *Winters* doctrine is its lack of a quantification standard. The Supreme Court in *Arizona v. California* (1963) not only recognized the water rights of the five tribal reservations but also defined the first mechanism by which to quantify those rights. The "practicably irrigable acreage" (PIA) standard was established as a way to quantify a reservation's *Winters* rights for the purposes of awarding certain volumes of a shared resource to different users. PIA measures "those acres susceptible to sustained irrigation at reasonable costs"[9] and has been upheld in numerous cases[10]. However, there are concerns with this standard. The PIA standard limits the evaluation of other potential tribal uses of water that may have higher returns on their investment than developing agriculture (Colby et al. 2005, p. 13). Furthermore, the PIA standard results in smaller awarded volumes for those tribes not located an area conducive to agricultural production (*Ibid*.). Lastly, the Supreme Court of Arizona cites several other aspects of tribal water usage that could better inform equitable assessment of tribal water rights: land use planning, tribal traditions and culture, natural setting, economic base, past water usage, the present and projected population[11].

While there are problems with the PIA standard, there is general consensus from non-Native and Native authorities that *Winters* rights should be quantified. Non-Indian users of a shared water resource have an obvious desire to quantify a reservation's *Winters* rights: given that their water rights are often junior to tribal *Winters* rights, non-Native users have a sense of uncertainty about future water availability should a tribe start using its full volume of *Winters* rights. From a tribe's perspective, one advantage of quantification is that it can sell or lease its water rights once they are quantified[12]. Furthermore, there is a greater federal recognition of tribal water rights as new projects are being developed[13]. On the other hand, quantification is quite expensive. One way to overcome the financial obstacles would be for the federal government to provide both monetary and technical assistance for quantifying those rights (Pevar 2012, p. 214).

Tribal Water Rights in the Colorado River Basin

There are 29 federally recognized tribes in the Colorado River Basin (see Figure 1) who hold quantified and unquantified rights to more than 2.9 million acre feet (maf) of water each year (USBR 2012b, 2018). As shown in Table 1, many of these reservations were established as early as the mid-1800s, and thus, as was the case for the Gros Ventre and Assiniboine Tribes, their water rights often pre-date settler appropriations. Citing both the seniority and the uncertainty of the Native American water rights as reasons why "representing these rights and the associated demand is a critical component to assessing

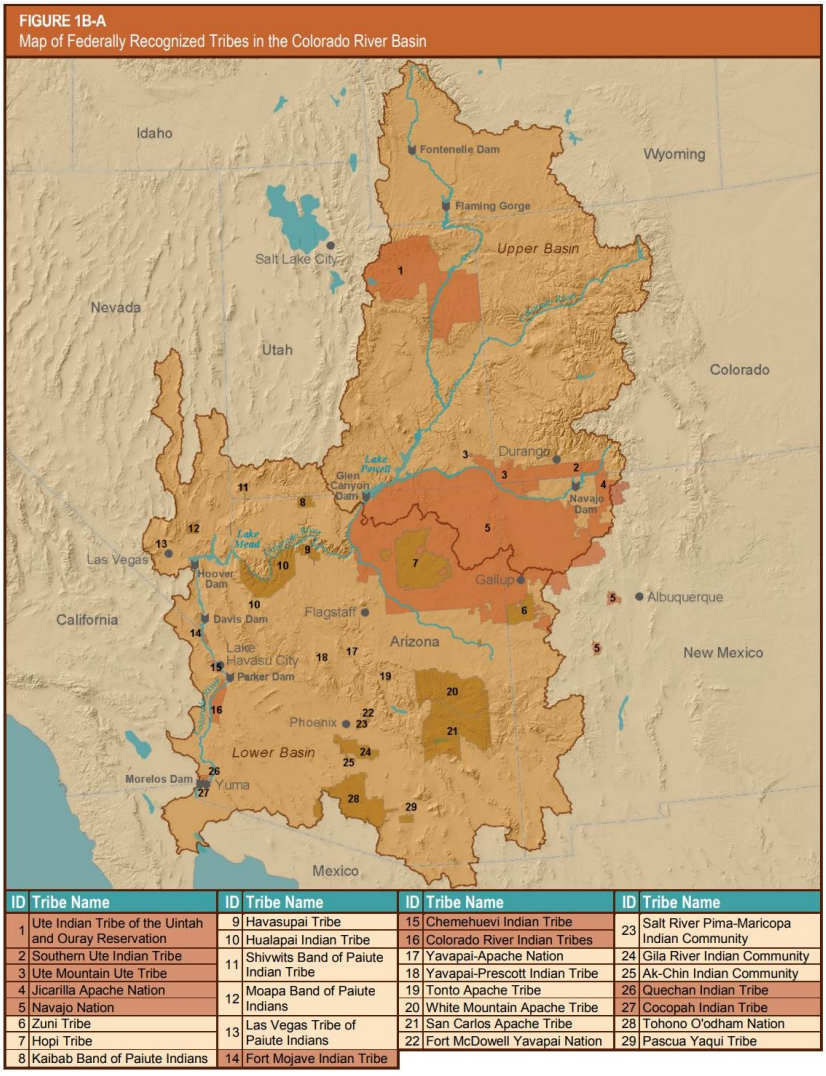
[9] *In re the General Adjudication of All Rights to Use Water in the Gila River System and Source* (2001), at 30, citing Big Horn I, 753 P.2d at 101.

[10] For instance, in *In re General Adjudication of All Rights to Use Water in the Big Horn River System* (1988), the special master assigned to adjudicate the water rights to the Big Horn River considered a range of uses in his determination of the volume to award to the Wind River Reservation, but still relied on the PIA standard.

[11] *In re the General Adjudication of All Rights to Use Water in the Gila River System and Source* (2001), at 40-47.

[12] Pevar 2012, p. 213

[13] *Ibid*.



ID	Tribe Name	ID	Tribe Name	ID	Tribe Name	ID	Tribe Name
1	Ute Indian Tribe of the Uintah and Ouray Reservation	9	Havasupai Tribe	15	Chemehuevi Indian Tribe	23	Salt River Pima-Maricopa Indian Community
2	Southern Ute Indian Tribe	10	Hualapai Indian Tribe	16	Colorado River Indian Tribes	24	Gila River Indian Community
3	Ute Mountain Ute Tribe	11	Shivwits Band of Paiute Indian Tribe	17	Yavapai-Apache Nation	25	Ak-Chin Indian Community
4	Jicarilla Apache Nation	12	Moapa Band of Paiute Indians	18	Yavapai-Prescott Indian Tribe	26	Quechan Indian Tribe
5	Navajo Nation	13	Las Vegas Tribe of Paiute Indians	19	Tonto Apache Tribe	27	Cocopah Indian Tribe
6	Zuni Tribe	14	Fort Mojave Indian Tribe	20	White Mountain Apache Tribe	28	Tohono O'odham Nation
7	Hopi Tribe			21	San Carlos Apache Tribe	29	Pascua Yaqui Tribe
8	Kaibab Band of Paiute Indians			22	Fort McDowell Yavapai Nation		

Figure 1. Map of federally recognized tribal lands within the CRB (USBR 2018). Note that the 2012 water supply and demand report tabulates information for 22 of the 29 tribes shown here, while alluding to the water rights claims of five others. The Shivwits Band of Paiute Indian Tribe and the Las Vegas Tribe of Paiute Indians (included in the map) are not mentioned in the 2012 report, and since they are not part of the Ten Tribes Partnership their water rights were not analyzed for the 2018 report.
Table 1. Earliest possible priority dates for Native America *Winters* rights in the CRB. Dates found in USBR 2012b unless otherwise noted.

	Tribal Reservation	Earliest Priority Date
Upper Basin	Jicarilla Apache Nation	1880
	Navajo Nation	1868
	Southern Ute Indian Tribe	1868
	Ute Indians of the Uintah and Ouray Reservation	1861
	Ute Mountain Ute Tribe	1868
Lower Basin Main Stem	Chemehuevi Indian Tribe	1907
	Cocopah Indian Tribe	1915[#]
	Colorado River Indian Tribes	1865
	Fort Mojave Indian Tribe	1890
	Quechan Indian Tribe	1884
	Hopi Tribe	1882*
	Navajo Nation	1868
Lower Basin - CAP	Ak-Chin Indian Community	1912
	Fort McDowell Yavapai Nation	1903
	Gila River Indian Community	1859
	Pascua Yaqui Tribe	1964*
	Salt River Pima-Maricopa Indian Community	1879
	San Carlos Apache Tribe	1871
	Tohono O'odham Nation	1980*
	Tonto Apache Tribe	1871*,[#]
	White Mountain Apache	1891*
	Yavapai-Apache Nation	1871*
	Yavapai-Prescott Tribe	1935*

* Hopi: https://www.hopi-nsn.gov/tribal-services/department-natural-resources-2/
* Pascua Yaqui, Tonto Apache, White Mountain Apache, Yavapai-Apache: Inter Tribal Council of Arizona member pages (https://itcaonline.com/member-tribes/)
* Tohono O'odham: http://www.tonation-nsn.gov/tohono-oodham-history/
* Yavapai-Prescott: https://www.ypit.com/about_ypit.htm

The Cocopah Indian and the Tonto Apache Reservations in Arizona provide good examples for why only the earliest priority dates are reported here. Some of the Cocopah rights date to 1915, others date to 1917, and still later ones date to 1974. For the Tonto Apache and several other Arizona tribes, the priority date is difficult to establish because, though Congress reserved land for them in 1871, Congress also dissolved the reservation in 1875 when they forcibly removed the Indians to a single reservation.

future water demand in the Colorado River Basin" (USBR 2012b, p. C9-1), the United States Bureau of Reclamation (USBR) recently has collaborated with Native American tribes in the CRB to quantify their water rights and model future demand. In its 2012 Colorado River Basin Water Supply and Demand Study, the USBR summarized the current status of quantified diversion and depletion rights and then modeled six future demand scenarios for most of the tribes with entitlements to CRB water. The resulting estimates for the quantified and predicted diversion rights are summarized in Table 2.

Soon after the publication of the 2012 study, the USBR and the Ten Tribes Partnership of the Colorado River (the Partnership) initiated a second collaboration to address several shortcomings of the earlier work. Specifically, the 2012 study did not 1) consider impacts to tribal water use, 2) fully account for tribal water demand or tribal water used by others, and 3) demonstrate the impact of tribes using more of their *Winters* rights in the future than they are currently using (USBR 2018, p. 1A-1). The updated Tribal Water Study presents a thorough description of the physical setting, historical and cultural water uses, current and projected water usage, and challenges to developing water supplies for each of the ten Partnership tribes[14]. The total current usage and two sets of model predictions are provided in Table 3.

It is clear from these tables that many tribes are not using their full allocation of Colorado River water. This can be assumed from the difference between the current diversion rights and the future projections for all the Tribes in Table 2, but it is especially evident in the more detailed analysis of the Ten Tribes Partnership. The five Upper Basin tribes in the Partnership are currently using about 63% of their water rights, while the five Lower Basin Partnership tribes are currently using about 84%. (See Figure 2 for a graphical depiction of the lack of water use.) Other researchers have concluded that tribes throughout the CRB are using even less than what's calculated here (CRRG 2016). Regardless of which percentages are correct, the fact that tribes are not utilizing their full rights introduces uncertainty to future water demand projections and subsequent management decision.

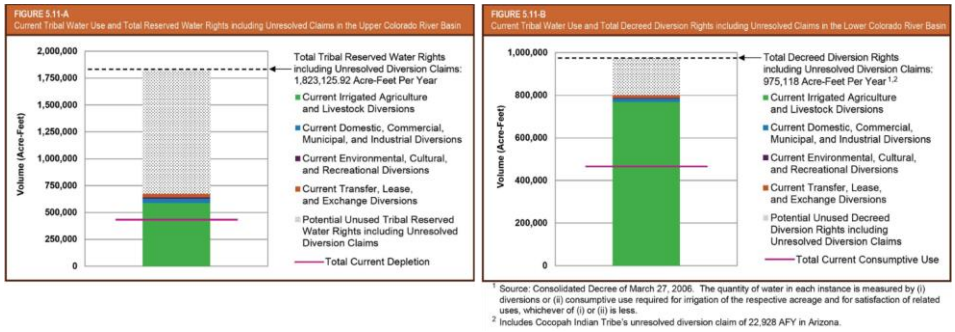


Figure 2: Graphs of current tribal water usage by category compared to total reserved water rights. From USBR 2018.

[14] USBR and the Partnership explored the impacts of four different possible demand scenarios on four categories of water use for each Tribe: Irrigated Agriculture and Livestock; Domestic, Commercial, Municipal, and Industrial; Environmental, Cultural, and Recreational; and Transfers, Leases, and Exchanges. (USBR 2018)

Table 2. Estimated diversion rights[#] for Colorado River Basin tribes. Data from USBR 2012b.

		Current Rights	2060 Scenario B*	2060 Scenario D2*
	Tribal Reservation	**Diversion (afy)**	**Diversion (afy)**	**Diversion (afy)**
Upper Basin	Jicarilla Apache Nation	45,683	45,683	45,683
	Navajo Nation	606,660	662,070	1,150,069
	Southern Ute Indian Tribe^	137,090	(n/a)	(n/a)
	Ute Indians of the Uintah and Ouray Reservation	480,594	316,354	480,594
	Ute Mountain Ute Tribe^	88,358	(n/a)	(n/a)
	Total - Upper Basin	**1,358,385**	**1,024,107**	**1,676,346**
Lower Basin Main Stem	Chemehuevi Indian Tribe	11,340	11,340	11,340
	Cocopah Indian Tribe	10,847	5,311	10,847
	Colorado River Indian Tribes	719,248	707,442	719,248
	Fort Mojave Indian Tribe	132,789	102,011	132,789
	Quechan Indian Tribe	77,966	72,872	77,966
	Hopi Tribe	6,028	4,278	4,065
	Navajo Nation	-	-	126,767
	Total - Lower Basin Main Stem	**2,310,575**	**1,923,083**	**2,628,536**
Lower Basin - CAP	Ak-Chin Indian Community	75,000	75,000	75,000
	Fort McDowell Yavapai Nation	18,233	18,233	18,233
	Gila River Indian Community	328,800	328,800	328,800
	Pascua Yaqui Tribe	500	500	500
	Salt River Pima-Maricopa Indian Community	35,300	35,300	35,300
	San Carlos Apache Tribe	64,145	43,500	43,500
	Tohono O'odham Nation	74,000	54,800	74,000
	Tonto Apache Tribe	128	128	128
	White Mountain Apache	25,000	2,031	25,000
	Yavapai-Apache Nation	1,200	1,200	1,200
	Yavapai-Prescott Tribe	500	500	500
	Total - CAP Allocations	**622,806**	**559,992**	**602,161**
TOTAL - Tribal Water Rights in the CRB		**2,933,381**	**2,483,075**	**3,230,697**

[#] Only diversion rights are shown here, though estimates of the depletion rights for the mainstem water users are also available. See also Jankowski 2018 for a more detailed summary of the data presented in USBR 2012b.

* Scenario B projections assumed slow growth with an emphasis on economic efficiency and were chosen for inclusion here because in some cases this scenario more accurately reflected the fact that some tribes currently use only a small fraction of their water right. Scenario D2 models assumed a growing economy combined with increased environmental responsibility (USBR 2012a).

^ These two tribes requested that their demand not be separated from the projections for the state as a whole.

Table 3. Estimated water rights for the members of the Ten Tribes Partnership of the Colorado River Basin. Data from USBR 2018.

		USBR 2018					
		Current Usage		2060 Scenario B*		2060 Scenario C2*	
	Tribal Reservation	**Diversion**	**Depletion**	**Diversion**	**Depletion**	**Diversion**	**Depletion**
Upper Basin	Jicarilla Apache Nation	32,575	32,575	18,339	18,339	45,683	34,195
	Navajo Nation	361,315	235,079	498,401	312,406	626,092	386,065
	Southern Ute Indian Tribe	41,329	22,724	34,104	18,781	128,939	70,049
	Ute Indians of the Uintah and Ouray Reservation	212,564	128,788	549,685	280,776	549,685	280,776
	Ute Mountain Ute Tribe	24,366	12,497	24,366	12,497	99,709	78,123
	Total - Upper Basin	**672,149**	**431,663**	**1,124,895**	**642,799**	**1,450,108**	**849,208**
Total Resolved Rights – Upper Basin		**1,060,781**					
Lower Basin Main Stem	Chemehuevi Indian Tribe	312	167	5,304	2,865	11,240	9,503
	Cocopah Indian Tribe	6,973	3,835	10,847	5,966	10,847	8,201
	Colorado River Indian Tribes	645,848	357,097	645,848	323,260	721,248	595,493
	Fort Mojave Indian Tribe	85,618	66,446	132,789	117,467	132,789	117,467
	Quechan Indian Tribe	61,646	37,554	77,966	49,918	77,966	61,734
	Total - Lower Basin	**800,397**	**465,099**	**872,754**	**499,476**	**954,090**	**792,398**
Total Resolved Rights – Lower Basin		**952,190**					
TOTAL		**1,472,546**	**896,762**	**1,997,649**	**1,142,275**	**2,404,198**	**1,641,606**

* Scenario B projections assumed slow water development partially driven by lack of flexible water development options, lack of funds, and lack of water claim resolutions, all of which was modeled as leading to a decline in the standard of living and even longer delays for resolving tribal water claims (USBR 2018).

* Scenario C2 is a rapid development scenario that includes flexible water governance options, increased funding levels, and final resoluti on and implementation of tribal water (USBR 2018).

While it is important to know what any given Tribe's water rights and usage are, from a regional water management perspective it is also important to consider how each Tribe's rights and usage affect the surrounding state's water allocation. Per *Arizona v. California* (1963), each tribe's allocation of CRB water counts towards the total volume allocated to the surrounding state (Stern and Sheikh 2019). Because some reservations straddle state boundaries, their water rights affect both states. If we rearrange the data in USBR 2012b by state (see the Appendix) and compare the total tribal water allocations by state to the state allocation (see Table 4), we see that quantified tribal water rights account for a majority of the Colorado River water allocated to some states.

Table 4. Tribal diversion rights to Colorado River Basin water as a percentage of the state's allocation.

	State Allocation (maf)*	Tribal Allocation by State (afy)^	Tribal % of State Allocation
Arizona	2.85	1,641,012	58%
California	4.40	183,369	4%
Colorado	3.88	225,448	6%
New Mexico	0.84	693,516	82%
Nevada	0.30	12,546	4%
Utah	1.73	795,445	46%

* Data from Stern and Sheikh 2019. Assumes 15 maf/y discharge of the Colorado River. Wyoming is not included because there are no federally recognized tribes with Colorado River Basin water rights in Wyoming.

^ Data from USBR 2012b. Includes quantified and unquantified rights.

Future Trends

From a quantity perspective, the overall future demand scenarios modeled in the Tribal Water Study are provided in Figure 4. However, quantification is only part of the story. That study also notes the need for both flexible water development mechanisms and regional coordination.

And in fact, we see both of these needs being met already as Arizona worked to adopt a Drought Contingency Plan (DCP). The DCP was seen as a necessary measure to protect Lake Mead from running dangerously low due to the combined effects of the long-term regional drought and the well-known structural deficit of the Colorado River being over-allocated. Negotiations in Arizona to ratify the agreement had stalled until the Gila River Indian Community and the Colorado River Indian Tribes entered the conversation and collaborated with other interested parties to develop innovative water storage agreements (Sundust et al. 2019). As noted by Arizona Representative Raul M. Grijalva, "[w]ithout tribal participation, the DCP would not be possible" (Sundust et al. 2019, p. 3).

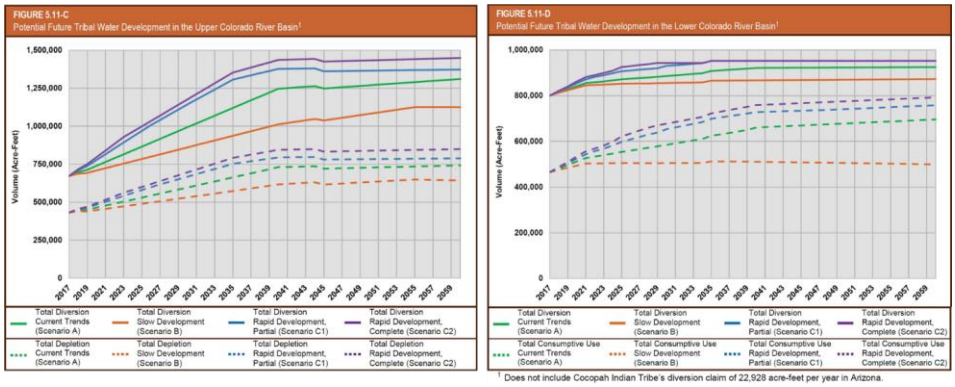


Figure 3: Summary of potential future tribal water development. From USBR 2018.

Conclusion

Until recently, most tribes lacked funds to develop their *Winters* water rights[15], but this might be changing as tribes increase their revenue from gaming, agriculture, or other economic development activities. What is not as clear is how the quantification of those rights impacts the likelihood of developing those rights given both the financial and legal obstacles. Most water infrastructure projects require some federal funding to succeed, which might explain why there is a recognized lack of suitable water infrastructure on tribal lands that contributes to a tribe's inability to develop their water rights. But many tribes also face legal constraints that prevent them from implementing water transfers to non-Native users. Given that the USBR has recommended addressing both of these issues, and that two Arizona tribes contributed important concessions for a regional plan to succeed, maybe history is starting to change.

[15] Pevar 2012, p. 209

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