TULANE INSTITUTE
ON WATER RESOURCES LAW & POLICY

FEDERAL LANDS IN THE MISSISSIPPI RIVER CORRIDOR: PLANNING FOR THE WATER RIGHTS AND NEEDS OF TRIBAL AND NON-TRIBAL RESERVATIONS

A White Paper by the Tulane Institute on Water Resources Law & Policy[1]

INTRODUCTION

Over fifty-five million people live in the Mississippi River's ten main stem states that all rely on the River's shared water resources.[2] The long-accepted presumption that there will be sufficient water to meet domestic, agricultural, and industrial demands in the Mississippi River Corridor can no longer serve as a basis for water planning, or, more accurately, an excuse to avoid planning. Persistent drought conditions throughout the Mississippi River watershed now regularly cause massive disruptions to navigation and commerce. These low water events, compounded by sea level rise, also threaten the drinking water supply for communities at the mouth of the river.[3] Despite these very real and visible threats to water resources in the Mississippi River system, public

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[2] U.S. CENSUS BUREAU, ANNUAL ESTIMATES OF THE RESIDENT POPULATION FOR THE UNITED STATES, REGIONS, STATES, DISTRICT OF COLUMBIA AND PUERTO RICO: APRIL 1: 2020 TO JULY 1, 2023 (NST-EST2023-POP), *accessed* https://www.census.gov/data/tables/time-series/demo/popest/2020s-state-total.html.

[3] Chelsea Harvey, *Here's Why Salt Water is Invading the Mississippi and Whether it Will Happen More Often*, E&E NEWS (Oct. 12, 2023), https://www.scientificamerican.com/article/heres-why-salt-water-is-invading-the-mississippi-and-whether-it-will-happen-more-often/.

officials are welcoming new water-intensive data centers from Iowa to Mississippi.[4] Lithium mining operations are starting up Arkansas.[5] Demand for corn has dramatically increased as a result of federal fuel standards relying on ethanol.[6] Before embracing all of these developments that require available Mississippi River water, individual states must take a step back and account for existing water rights and users to ensure the proper management frameworks are in place.

While water for public supply, agriculture, and navigation are regularly discussed in the context of Mississippi River management, a significant aspect has long been overlooked: federal reserved water rights. These rights come into play on federally reserved lands and can have priority, even under state law. Reserved rights are well understood and incorporated into the water regimes of arid western states, but they have not yet played a part in water law in eastern states, including those along the Mississippi River. As climate change strains water resources in the Mississippi River Corridor, state governments and natural resource agencies should identify and account for potential federal water rights. Such efforts will help states, localities, tribes, and federal land managers better prepare for and mitigate climate change impacts while protecting

[4] Erin Jordan, *With Data Centers and Drought, Iowa Studies Aquifers*, THE GAZETTE (May 31, 2024), https://www.thegazette.com/environment-nature/with-data-centers-and-drought-iowa-studies-aquifers/; Emily Wagster Pettus, *Mississippi Legislators Approve Incentives for 2 Large Data Centers by Amazon Web Services*, ASSOCIATED PRESS (Jan. 25, 2024), https://apnews.com/article/mississippi-data-centers-a143ba6970a4e1ff401f5463f2cd80a8.

[5] News Release, Exxon Mobil Corp., ExxonMobil Drilling First Lithium Well in Arkansas, Aims to be a Leading Supplier for Electric Vehicles by 2030, (Nov. 13, 2023), https://corporate.exxonmobil.com/news/news-releases/2023/1113_exxonmobil-drilling-first-lithium-well-in-arkansas.

[6] Richard Valdmanis, *Biden Team Sets Out Path for Ethanol Aviation Fuel Subsidies*, REUTERS (Apr. 30, 2024), https://www.reuters.com/sustainability/biden-team-sets-out-ethanols-path-aviation-fuel-subsidies-2024-04-30/; Dillon Weber, *Of Corn and Climate Change: Ethanol in America*, KLEINMAN CTR. FOR ENERGY POL'Y (Feb. 26, 2016), *available at* https://kleinmanenergy.upenn.edu/wp-content/uploads/2020/08/Weber-Of-Corn-and-Climate-Change-Ethanol-in-America-1.pdf.

conservation lands and respecting tribal sovereignty over natural resources. Due to the unique cultural history and geographic characteristics of each tribe in the United States, this paper does not seek to predict or quantify potential water rights for an individual tribe (nor for non-tribal reservations). It aims to identify where water management in the Mississippi River Corridor falls short with respect to potential federal reserved rights and prompt discussions for their incorporation into broader water law and policy frameworks. The scope is limited to federal lands that overlap with main stem states—Minnesota, Wisconsin, Iowa, Illinois, Missouri, Kentucky, Tennessee, Arkansas, Mississippi, and Louisiana. When viewing the larger Mississippi River watershed, many more tribal and non-tribal lands would need to be considered. For tributaries running through states with different water law systems, the considerations are more expansive and raise more individual state law questions related to managing allocations between prior appropriation and riparian jurisdictions, but this is beyond the scope of this paper.[7]

I. HISTORY AND APPLICATION OF FEDERAL RESERVED WATER RIGHTS

The federal government maintains certain federal water rights, which have a special, preferential relationship to state law. In the landmark 1908 case, *Winters v. United States*, the

[7] For example, the Missouri River passes through Montana, North Dakota, South Dakota, and Nebraska before converging with the main stem in Missouri. Nat'l Wild & Scenic Rivers Syst., *Missouri River*, https://www.rivers.gov/river/missouri-montana (last visited June 30, 2024). To the west, the Arkansas River originates in Colorado and passes through Kansas and Oklahoma, Arkansas.
America's Watershed Initiative, *Arkansas River & Red River*, https://americaswatershed.org/reportcard/the-basins/arkansas-river-and-red-river/ (last visited June 30, 2024).

Supreme Court first recognized this principle, holding that when the federal government sets aside public lands, it implicitly reserves sufficient water to fulfill that reservation's purposes.[8] This notion of federal reserved water rights is one of the "few exceptions to Congress' explicit deference to state water law in other areas."[9] While these claims can be made for various types of federal reservations, the reserved rights doctrine is not applied identically to all types of reservations.

a. Reserved Rights and Tribal Reservations

Federal reserved water rights initially arose in the context of tribal reservations. Reserved rights claims require a showing of necessity, which is divided into two elements: 1) the hydrology and climate of the land in question must be such that reserved water rights are necessary; and 2) state water law does not provide an adequate mechanism to ensure a sufficient amount of water necessary to fulfill the purpose of the reservation.[10] These rights are created when the federal government establishes the reservation, even if a tribe has not exercised them until modern times.[11] A tribe making this claim must show that water is necessary for present and future uses.[12] Because many Native American reservations were created for agrarian purposes, courts typically construe *Winters* claims to encompass water for agricultural purposes, which typically includes

[8] Winters v. United States, 207 U.S. 564, 576 (1908).
[9] United States v. New Mexico, 438 U.S. 696, 715 (1978).
[10] *See Winters*, 207 U.S. 564; *see also* Jacquelin Goodrum, *Taking on Water: Winters, Necessity, and the Riparian East*, 43 WM. & MARY ENV'T L. & POL'Y REV. 807, 830-31 (2019).
[11] Goodrum, *supra* note 10, at 811 (quoting GOLDBERG AT AL., AMERICAN INDIAN LAW: NATIVE NATIONS AND THE FEDERAL SYSTEM 1226 (6th ed. 2010)).
[12] Arizona v. California, 373 U.S. 546, 600-601 (1963).

with it water for domestic uses.[13] Additionally, reserved rights claims under *Winters* can, in theory, encompass the quality of water needed to sustain a reservation's primary purpose, though that interpretation has not been as widely adopted in the federal circuits.[14]

b. Reserved Rights on Non-Tribal Reservations

Notably, reserved water rights are not limited to Native American reservations, but extend to other federally reserved lands, like National Forests, National Monuments, National Wildlife Refuges, and other lands managed by the U.S. Department of the Interior.[15] In 1963, the Supreme Court held that the same principles underlying reserved water rights for tribal reservations applied to other federal reservations.[16] However, in *Cappaert v. United States*, the Court clarified that the amount reserved was the minimum amount of water necessary to fulfill the purpose of the reservation.[17] There are often multiple intended purposes for a federal reservation, but not all are viewed in the same way. Three years after the *Cappaert* decision, the Supreme Court further narrowed the scope of reserved rights. The Court distinguished that the *Winters* doctrine only reserves water necessary to fulfill the primary purpose of a reservation and does not guarantee

[13] *See* Judith V. Royster, *Winters in the East: Tribal Reserved Rights to Water in Riparian States*, 25 WM. & MARY ENV'T L. & POL'Y REV. 169, 175 (2000), *available at* https://scholarship.law.wm.edu/cgi/viewcontent.cgi?article=1233&context=wmelpr.
[14] *See* Agua Caliente Band of Cahuilla Indians v. Coachella Valley Water Dist., 2019 WL 2610965, at *12 (C.D. Cal. Apr. 19, 2019).
[15] LAURA B. COMAY ET. AL., CONG. RSCH. SERV., R45340, FEDERAL LAND DESIGNATIONS: A BRIEF GUIDE (May 19, 2023), *available at* https://sgp.fas.org/crs/misc/R45340.pdf.
[16] Arizona v. California, 373 U.S. 546, 601 (1963).
[17] 426 U.S. 128 (1975).

water for other purposes, even if they are valuable.[18] This differs from the inquiry for tribal reservations, which courts have often interpreted as having multiple primary purposes.[19]

c. Reserved Rights and State Law

Federal reserved water rights have primarily been applied in the Western United States, where water scarcity necessitates a rigorous legal framework for water allocation.[20] Western states generally follow prior appropriation, a legal system in which water is allocated to users based on a seniority system in which the first person to take a quantity of water for beneficial use acquires water rights to the source.[21] The history and drier nature of the West make prior appropriation a better fit for the region.[22] In contrast, states east of the Mississippi River generally follow riparian water law principles, which traditionally allocated shared water rights based on land ownership along water bodies.[23] Each of the ten Mississippi River states follow water doctrines based in riparianism, so the question of how to incorporate potential water rights into Mississippi River management regimes is an unanswered but important question.

The focus of common-law riparian water rights is reasonable use, meaning each riparian owner is entitled to reasonable use of the water, provided they do not unreasonably interfere with

[18] *United States. New Mexico*, 438 U.S. 696, 717-18 (1978).
[19] *See* Royster, *supra* note 13, at 175. Courts disagree on the validity of multiple primary purposes for tribal reservations beyond agriculture and creating a settled society. *Id.*
[20] Goodrum, *supra* note 10, at 809.
[21] CYNTHIA BROUGHER, CONG. RSCH. SERV., RL32198, INDIAN RESERVED WATER RIGHTS UNDER THE WINTERS DOCTRINE: AN OVERVIEW 2 (2011), *available at* https://nationalaglawcenter.org/wp-content/uploads/assets/crs/RL32198.pdf.
[22] *Id.*
[23] *Id.*

the rights of other riparian owners.[24] The common-law riparian system grants water rights to landowners whose property abuts a watercourse.[25] Traditional riparian rights differ from prior appropriation in that they are not quantified and do not follow seniority.[26] This system can lead to conflicts and uncertainties in the absence of an administering body and enforceable state water use regulations, especially during times of water scarcity. Regulated riparian rights, on the other hand, involve state administration and permits for water use.[27] Under this system, water rights are not simply tied to land ownership but are instead granted through a regulatory process that considers factors such as availability, existing rights, and the public interest.[28] It should be noted, however, that riparian rights still translate to ownership of land abutting water; but there is wider opportunity for other users.[29]

The application of federal reserved rights in riparian jurisdictions is a complex issue that has yet to be addressed in detail by the courts, partially attributed to the East's more abundant water supply and fewer tribes and tribal lands than in the West.[30] Although riparian regimes have been easy to implement in the past, the growing impacts of climate change on freshwater

[24] Joseph Dellapenna, *The Evolution of Riparianism in the United States*, 95 MARQ. L. REV. 53, 55 (2011), *available at* https://scholarship.law.marquette.edu/cgi/viewcontent.cgi?article=5093&context=mulr.
[25] *Id.* at 55.
[26] *Id.* at 81.
[27] *Id.* at 86-87.
[28] *Id.* at 87-88.
[29] Joseph Dellapenna, *The Law of Water Allocation in the Southeastern States at the Opening of the Twenty-First Century*, 25(1) U. ARK. LITTLE ROCK L. REV. 9, 34-35 (2002).
[30] Jim Shore & Jerry C. Straus, *The Seminole Water Rights Compact and the Seminole Indian Land Claims Settlement Act of 1987*, 6 FL. ST. J. LAND USE & ENV'T L. 1 (1990), *available at* https://ir.law.fsu.edu/cgi/viewcontent.cgi?article=1079&context=jluel.

resources presents new challenges.[31] As water demand in the Mississippi River Corridor increases due to the expansion of water-intensive industries and agriculture, precipitation patterns have also become less predictable, stressing the capacity of riparian regimes to allocate water equitably and efficiently among users.[32] Thus, it is important to understand the current and future water needs of Native American reservations, National Wildlife Refuges, and other federal lands along the Mississippi River and explore opportunities to incorporate these needs as the hydrology and demands in the watershed continue to evolve.

II. WATER RIGHTS AND TRIBAL RESERVATIONS

Tribal reserved water rights consist of four fundamental principles. First, under the *Winters* doctrine, the establishment of a Native American reservation implicitly reserves the amount of water which is needed to fulfill the purposes of the tribe's reservation.[33] Though courts debate what constitutes a primary purpose on a tribal reservation, agriculture "is universally recognized as a purpose for which reservations were set aside."[34] Second, when a tribe reserves for themselves the right to continue pre-existing or aboriginal practices, that implicitly reserves sufficient water to support those activities as well.[35] The idea is that tribes would not have bargained to continue these practices without availability of sufficient water.[36] Third, reserved

[31] Royster, *supra* note 13, at 186-87.
[32] FIFTH NATIONAL CLIMATE ASSESSMENT, CH. 4: WATER (2023), *available at* https://nca2023.globalchange.gov/chapter/4/.
[33] Royster, *supra* note 13, at 174.
[34] Id. at 175.
[35] *Id.* at 176.
[36] *Id.*

water rights are, as a matter of federal law, protected from interference by subsequent non-tribal uses of water.[37] Finally, tribal reserved rights are not forfeited or abandoned by non-use.[38]

Native American reservations in the Mississippi River Corridor were established through various measures, sometimes by a treaty with the U.S. government, some through subsequent land purchases by tribes following forced removal and later resettlement, while some are later put into trust through an administrative action.[39] Treaties typically lay out the duties the federal government owes to tribes, the geographic boundaries for tribal reservations, and the practices and uses of those lands that were to be protected so that Native American communities could maintain their culture and way of life.[40] Those practices which tribes reserved for themselves to continue inform the reserved water rights analysis.[41] Despite these agreements and the interpretive rule that ambiguities in treaties are to be resolved from the standpoint of tribal members,[42] the historic treatment of Native Americans and their lands is marked by violence and exploitation.[43] Treaty rights have been and continue to be overlooked or ignored by federal and

[37] *Id.* at 179.
[38] *Id.*
[39] The practice of entering into treaties with tribes ended following an 1871 law. Indian Appropriation Act of March 3, 1871, 16 Stat. 566 (1871).
[40] *American Indian Law: A Beginner's Guide - Treaties*, LIB. OF CONG., *available at* https://guides.loc.gov/american-indian-law/Treaties.
[41] United States v. Adair, 723 F.2d 1394 (9th Cir. 1983) (holding that the Klamath Tribe's fishing and hunting rights guaranteed by treaty carried implied water rights under *Winters*).
[42] Winters v. United States, 207 U.S. 564, 576 (1908).
[43] Sarah Pruitt, *Broken Treaties with Native American Tribes: Timeline*, HISTORY CHANNEL (July 12, 2023), https://www.history.com/news/native-american-broken-treaties.

state entities.[44] The enforcement of treaty rights has largely been through the courts, a slow road to restoring the fundamental rights of tribal communities.[45] Recently, the Supreme Court weakened the federal government's treaty obligations to tribes following *Arizona v. Navajo Nation*, in which the Court held that the treaty establishing the Navajo Reservation did not place an affirmative duty on the United Staes to secure the water to which the Tribe is entitled.[46] In other words, despite the existence of water rights on a reservation, there is no guarantee that those rights can be fully realized.

a. Mechanisms to Establish Tribal Water Rights

One pathway for federal tribes to establish federal reserved water rights is to bring a suit demonstrating necessity pursuant to the *Winters* doctrine. However, proving the necessity of water for reservations presents several challenges. Tribes must demonstrate that the reserved water is necessary to fulfill the purposes of the reservation by providing evidence in treaties or other agreements of traditional water uses and practices.[47] This involves proving historical and cultural uses of water, which unfortunately often relies on incomplete or non-existent historical

[44] Bennet Goldstein, *How Ojibwe Tribes in Wisconsin Resisted Efforts to Deny Treaty Rights*, WISC. WATCH (Feb. 24, 2023), https://wisconsinwatch.org/2023/02/how-ojibwe-tribes-in-wisconsin-resisted-efforts-to-deny-treaty-rights/; Matthew L. M. Fletcher, *Indian Tribes Are Governing Well. It's the States That Are Failing*, WASH. MONTHLY (Sept. 30, 2021), https://washingtonmonthly.com/2021/09/30/indian-tribes-are-governing-well-its-the-states-that-are-failing/.

[45] For example, treaties that guarantee a tribe's right to fish in waters have been upheld against state-level efforts to exclude tribes from access to rivers and streams. United States v. Winans, 198 U.S. 371 (1905); Lac Courte Oreilles et. al. v. Voight, 700 F. 2d 341 (7th Cir. 1983).

[46] 599 U.S. 555, 569-70 (2023).

[47] Hope M. Babcock, *Reserved Indian Water Rights in Riparian Jurisdictions: Water, Water Everywhere, Perhaps Some Drops for Us*, 91 CORNELL L. REV. 1203, 1226, 1242 (2006).

records.[48] Even more difficult is demonstrating the cultural and spiritual significance of water to tribes in a legal system that often prioritizes economic and agricultural uses.[49] Overall, cultural and non-economic needs may not receive adequate consideration under traditional legal standards. Demonstrating the necessity of water for ecological purposes, such as maintaining wetlands or supporting endangered species, adds yet another layer of complexity.[50] Courts must balance the water needs of tribes with those of non-tribal users, environmental regulations, and state water management policies.[51] This can lead to compromises that may not fully satisfy a tribe's individual needs.[52]

Another hurdle involves ascertaining dates of establishment and alterations to boundaries. Federal reserved water rights are typically based on the date when the land was reserved for the tribe, which often predates the establishment of state water rights systems and claims of non-tribal users.[53] In riparian states, where water rights are usually based on land ownership and reasonable use rather than priority, integrating these senior federal rights can be contentious.[54] Ascertaining a reservation's precise boundaries throughout time can be difficult, especially when historical documentation is incomplete or contested.

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[48] Anita Porte Robb, *Applying the Reserved Rights Doctrine in Riparian States*, 14 N.C. CENT. L. REV. 98, 105 (1983).
[49] *Id.* at 105, 107.
[50] Stephen D. Earsom, Note, *Striking Before the Iron Is Hot: How Tribes in the East Can Assert Their Winters Rights to Protect Tribal Sovereignty & Mitigate Climate Change*, 42 VA. ENV'T L.J. 47, 67 (2024).
[51] *Id.*
[52] What constitutes "necessity" will vary based on the unique factors and circumstances of an individual tribe, but it is viewed as the amount of water necessary to maintain hunting and fishing rights, agrarian practices, and continue the tribe's "livelihood." Washington v. Fishing Vessel Ass'n, 443 U.S. 658, 686-87 (1979).
[53] Royster, *supra* note 13, at 170.
[54] *Id.*

In more recent times, water rights settlements have been the preferred method for addressing disputes over Native American water rights—there have been thirty-nine settlements since 1978.[55] These settlements are legally binding agreements between federally recognized tribes and the U.S. government that typically authorize funding to assist tribes in securing their water rights and define how much water they are entitled.[56] Every settlement, except for one, has been in a Western state.[57] Settlements are more proactive and can create certainty in water management instead of waiting until a lawsuit is necessary. There are four steps in the settlement process.[58] The first step is pre-negotiation, which broadly encompasses any actions taken before formal negotiations begin.[59] Pre-negotiation involves an array of federal actors, including the Department of Interior, Department of Justice, and the Office of Management and Budget.[60] These offices conduct a pre-negotiation process that consists of a fact-finding phase, which includes a summary of background information, an evaluation of claims, an assessment of the positions of all parties, and finally, the recommendation negotiation position of the federal government.[61] The second step is negotiation, which can last several years. The third step involves the enactment or approval of the settlement. Congress can enact settlement provisions into law, making them eligible for

[55] CHARLES V. STERN, CONG. RSCH. SERV., R44148, INDIAN WATER RIGHTS SETTLEMENTS 4 (2023), *available at* https://crsreports.congress.gov/product/pdf/R/R44148.
[56] *See id.*
[57] *Id.* at 6-9
[58] Stern, *supra* note 55, at 3.
[59] Often, pre-negotiation includes ongoing litigation between parties that might have prompted the request for a formal settlement. *Id.*
[60] Stern, *supra* note 55, at 4.
[61] *Id.* at 4

federal funding.[62] Alternatively, an administration may determine that congressional action is not necessary, and instead a settlement may be approved, either by the Secretary of the Interior, the U.S. Attorney General, or by judicial decree.[63] Last, the parties to a settlement will enter the final step—implementation, overseen and coordinated by the Secretary of the Interior's Indian Water Rights Office.[64] To date, there has been one water rights settlement in the eastern United States, but the rights were not quantified.[65]

Settlement provisions typically include the source of water for the tribe, off-reservation transfers, uses of water, funding, and compliance with federal environmental laws.[66] These agreements often require significant financial resources to cover the lengthy negotiation process and implementation of settlement provisions.[67] A primary concern for tribes looking to pursue water rights settlements is securing the necessary funding, and whether expenses associated with settlements outweigh potential costs of litigation.

b. Native American Tribes in the Mississippi River Corridor

The Mississippi River gets its name from the Ojibwe word for "Great River."[68] Long before European settlers arrived, Indigenous communities called the Mississippi River Valley home. There

[62] *Id.* at 5.
[63] *Id.*
[64] This step may include additional considerations for settlements that began through litigation or adjudication. *Id.*
[65] *Id.* at 6-8.
[66] *Id.* at 9-10.
[67] The provisions often require financing for water infrastructure projects so that tribes can actually utilize water resources to which the settlements entitle them.
[68] O. Vernon Burton et. al., *Forced Over the Great River: Native Americans in the Mississippi River Valley, 1851-1900*, N. ILL. U. https://digital.lib.niu.edu/twain/forced (last visited Aug. 5, 2024).

are twenty-nine federally recognized tribes within the Mississippi River Corridor, with the bulk of tribes concentrated in upper river states. Minnesota is home to eleven of those tribes. Six of those tribes—the Boise Forte Band of Chippewa, the Fond du Lac Band of Lake Superior Chippewa, the Grand Portage Band of Chippewa, the Leech Lake Band of Ojibwe, the Mille Lacs Band of Ojibwe, and the White Earth Band of Ojibwe—are part of a centralized governmental authority, the Minnesota Chippewa Tribe.[69] The Red Lake Band of Chippewa Indians is not part of the Minnesota Chippewa Tribe and has its own distinct governing entity.[70] Each of the seven Chippewa (Anishinaabe) reservations were established by treaty.[71] Six of the seven Chippewa reservations were allotted with the passage of the Dawes General Allotment Act in 1887, and the seventh was established in the Old Crossing Treaty of 1863.[72] The remaining four tribes are Dakota, or Sioux, communities—the Upper Sioux Community, the Lower Sioux Community, the Prairie Island Indian Community, and the Shakopee Mdewakanton Sioux Community.[73] After the United States took the Tribes' lands following the U.S.-Dakota War, Congress reestablished the four Dakota communities in 1866, but the modern communities represent tiny pieces of their native lands.[74]

[69] Minnesota Chippewa Tribe, *The Minnesota Chippewa Tribal Executive Committee*, https://www.mnchippewatribe.org/committee_minutes.html (last visited July 22, 2024).
[70] *Id.*
[71] Minn. Indian Aff. Council, *Tribal Nations in Minnesota*, https://mn.gov/indian-affairs/tribal-nations-in-minnesota/#:~:text=The%20four%20communities%20were (last visited Aug. 6, 2024).
[72] *Id.*; Indian Land Tenure Found., *Land Tenure History*, https://iltf.org/land-issues/history/ (last visited Aug. 6, 2024).
[73] *Id.*
[74] *Id.*

Wisconsin is home to eleven federally recognized tribes.[75] There are six bands of Chippewa (Ojibwe) with reservations in the state: the Bad River Band of the Lake Superior Tribe of Chippewa Indians of the Bad River Reservation, Lac du Flambeau Band of Lake Superior Chippewa Indians of the Lac du Flambeau Reservation, Red Cliff Band of Lake Superior Chippewa Indians, St. Croix Chippewa Indians, and Lac Courte Oreilles Band of Lake Superior Chippewa. These reservations were established following a series of land cessation treaties with the federal government in 1837, 1842, and 1854.[76] For the other tribes, the Oneida Nation's reservation was established in 1838;[77] the Menominee reservation was established in 1854;[78] and the Stockbridge-Munsee Band of Mohican Indians' modern reservation boundaries were established in 1856.[79] Two tribes in Wisconsin have reservations that were not established by treaty. The Forest County Potawatomi Community reservation comprises of lands purchased by the Tribe with money allocated by Congress.[80] The Ho-Chunk Nation is the only Tribe in Wisconsin without one large reservation land area; however,

[75] Wis. Dep't Health Serv., *American Indians in Wisconsin – Overview*, https://www.dhs.wisconsin.gov/minority-health/population/amind-pop.htm#:~:text=Wisconsin%20is%20home%20to%2011,Cliff%20Band%20of%20Lake%20Superior (last visited July 17, 2024).
[76] Steven E. Silvern, *Reclaiming the Reservation: The Geopolitics of Wisconsin Anishinaabe Resource Rights*, 24(3) AM. INDIAN CULTURE & RSCH. J. 132-33 (2000).
[77] Wisc. Dep't Pub. Instruction, *Oneida Nation*, https://dpi.wi.gov/amind/tribalnationswi/oneida, (last visited July 23, 2024).
[78] Wisconsin First Nations, *Menominee Indian Tribe of Wisconsin*, https://wisconsinfirstnations.org/menominee-indian-tribe-of-wisconsin/ (last visited July 23, 2024).
[79] Wisc. Dep't Pub. Instruction, *Stockbridge-Munsee Band of Mohican Indians*, https://dpi.wi.gov/amind/tribalnationswi/mohican, (last visited July 23, 2024).
[80] Milwaukee Pub. Museum, *Potawatomi Culture*, https://www.mpm.edu/index.php/educators/wirp/nations/potawatomi (last visited July 19, 2024).

the Tribe has trust lands, held by the federal government in benefit for the Tribe, that are scattered throughout Wisconsin.[81]

In the remaining states, the Sac & Fox Tribe of the Mississippi in Iowa, or the Meskwaki Nation, reside on tribally-owned lands rather than a reservation.[82] Members of the Meskwaki Nation purchased land in Iowa in the 1850s, so it is owned by the Tribe itself and not held by the federal government.[83] In Illinois, the Prairie Band Potawatomi received back some of its ancestral lands earlier this year, making it the first tribal reservation in the state.[84] In the lower main stem states, there is the Mississippi Band of Choctaw whose reservation stretches across Mississippi and Tennessee.[85] Finally, there are four federally recognized tribes in Louisiana.[86] The Chitimacha Tribe of Louisiana reside on a reservation in central coastal Louisiana, which was put into trust in 1916.[87] The Coushatta Tribe of Louisiana established their community in the 1880s through provisions in the Homestead Act of 1862, which granted plots of public lands to citizens for a small registration

[81] Tribes apply to the Department of Interior for a trust land acquisition, which the United States will hold title in trust for the benefit of an individual Tribal member or Tribe. 25 C.F.R. § 151.1-151.6; *see also* Ho-Chunk Nation, *Division of Realty*, https://ho-chunknation.com/government/executive-branch/administrative/division-of-realty/, (last visited July 26, 2024).
[82] Meskwaki Nation, *A History of the Meskwaki People*, https://www.meskwaki.org/history/ (last visited July 16, 2024).
[83] *Id.*
[84] Eunice Alpasan, *Illinois Now Home to Federally Recognized Tribal Land After Prairie Band Potawatomi Nation Given Back Portion of Ancestral Land*, WTTW (Apr. 19, 2024), https://news.wttw.com/2024/04/19/illinois-now-home-federally-recognized-tribal-land-after-prairie-band-potawatomi-nation.
[85] 2023 STATE OF THE TRIBE, MISSISSIPPI BAND OF CHOCTAW (2023), *available at* https://www.choctaw.org/wp-content/uploads/2024/02/2023-State-of-the-Tribe_digital.pdf.
[86] Nat'l Park Serv., *American Indians in Louisiana*, https://www.nps.gov/jela/learn/historyculture/native-americans-in-louisiana.htm#:~:text=Today%2C%20there%20are%20four%20Federally,and%2011%20State%20recognized%20Tribes (last visited July 17, 2024).
[87] Sovereign Nation of the Chitimacha, *Tribal History*, https://www.chitimacha.gov/history-culture/tribal-history (last visited July 25, 2024) (the Tribe's reservation contains a portion of their aboriginal homeland).

fee.[88] The Jena Band of Choctaw Indians' land was given reservation status in 2007 through a proclamation by Assistant Secretary of Indian Affairs.[89] Lastly, the Tunica-Biloxi Indian Tribe of Louisiana's reservation was established in 1848, but the federal government had no direct involvement in its creation.[90]

It is important to acknowledge that there are many Native American communities in the United States that are not recognized by the federal government and therefore do not enjoy sovereign status. Rather, they are recognized by state governments. In Louisiana, there are eleven tribes recognized at the state level.[91] In Minnesota, there is one non-federally recognized tribe, the Mendota Community.[92] There is also one state recognized tribe in Wisconsin, the Brothertown Indian Nation.[93]

c. Unique Challenges for the Mississippi River Corridor

At a base level, the lack of judicial precedent applying federal reserved rights in riparian and regulated riparian jurisdictions renders much of the discussion hypothetical. Indeed, it must be noted that for much of our nation's history, Native American rights—and identity—were intended

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[88] Sheri Shuck-Hall, Linda P. Langley, & Raynella Fontenot, *Coushatta Tribe of Louisiana*, 64 PARISHES (updated Jan. 16, 2024), https://64parishes.org/entry/coushatta-tribe-of-louisiana.
[89] Proclaiming Certain Lands as Reservation for the Jena Band of Choctaw Indians of Louisiana, 72 Fed. Reg. 15711 (Bureau Indian Aff. Apr. 2, 2007), *available at* https://www.govinfo.gov/content/pkg/FR-2007-04-02/pdf/E7-6049.pdf.
[90] Tunica-Biloxi Tribe of Louisiana, *A Promise From the Sun*, https://www.tunicabiloxi.org/history/ (last visited July 25, 2024).
[91] La. Off. of the Governor, *Federal and State-Recognized Tribes*, https://gov.louisiana.gov/assets/Programs/IndianAffairs/2024-Louisiana-Updated-Tribal-List-newest.pdf
[92] Dakota Wicohan, *History on the Dakotas of Minnesota*, https://dakotawicohan.org/dakota-of-minnesota-history/ (last visited July 22, 2024).
[93] *See* Brothertown Indian Nation, *Restoration*, https://brothertownindians.org/restoration/#:~:text=In%202012%2C%20DOI%20concluded%20in,authority%20to%20recognize%20the%20Brothertown (last visited July 22, 2024).

to be erased, rather than honored. The complex histories of treaties, removal, and tribal resettlement, particularly in Minnesota and Wisconsin, could create additional complications in establishing water rights. That said, the Seventh Circuit Federal Court of Appeals, which encompasses Minnesota and Wisconsin, has repeatedly affirmed the treaty rights of federal tribes, including fishing and hunting rights.[94] Wild rice cultivation has been a large part of the history and culture of Chippewa lands and continues to be an important economic enterprise, which would be important in the context of how much water might be reserved for these tribes.[95]

Specific details and incorporation of federal reserved rights will vary depending on the date the reservation was established, the existence of treaty rights, and the existence of remedies under existing state water management regimes.[96] There is also the question of how water rights considerations vary between those reservations established by treaty, created by legislation, or those purchased by tribes that are not held by the federal government. It seems that those rights acquired by purchase are not subject to federal reserved rights, but these questions cannot be resolved without close analysis of each individual reservation and tribal history.

III. NATIONAL WILDLIFE REFUGES AND OTHER NON-TRIBAL RESERVATIONS

Though federal reserved rights extend to several types of non-tribal reservations, this discussion focuses primarily on National Wildlife Refuges, as they are the most prevalent federal

[94] Menominee Tribe v. United States, 391 U.S. 404 (1968) (upheld the hunting and fishing rights of the Menominee Tribe); Lac Courte Orielles et. al v. Voight, 700 F.2d 341 (7th Cir. 1983) (recognizing on and off-reservation fishing, hunting, and gathering treaty rights for multiple bands of the Lake Superior Chippewa in Wisconsin).
[95] Giovanna Dell'Orto, *Minnesota Ojibwe Harvest Sacred, Climate-Imperiled Wild Rice*, ASSOCIATED PRESS (Sept. 30, 2022), https://apnews.com/article/religion-minnesota-lakes-6caa0dd5f0842d922841cea34708e2f3.
[96] *See* Goodrum, *supra* note 10, at 830 (discussing necessity in relation to state water regimes).

land designation in the Mississippi River Corridor. President Teddy Roosevelt designated Pelican Island in Florida as the first wildlife refuge in 1903.[97] Congress enacted the first comprehensive legislation to guide refuge management 1966 with the National Wildlife Refuge System Administration Act.[98] There are different types of refuges in the United States, the most prominent being National Wildlife Refuges ("NWRs"). An NWR is an area of land and waters designated by the U.S. Fish & Wildlife Service ("FWS") for the conservation and management of fish, wildlife and plant resources and their habitats.[99] There are more than 570 across the country.[100] Another type of refuge are Wetland Management Districts ("WMDs"), comprised of FWS managed land designated for the conservation and management of wetland habitat and associated wildlife, including waterfowl and other wetland-dependent species.[101] There are thirty-eight WMDs in the United States, primarily in the Prairie Pothole Region of the Northern Great Plains, that contain waterfowl production areas and provide access to wildlife-dependent recreation.[102]

In 1997, President Clinton signed the National Wildlife Refuge System Improvement Act, the first organic legislation for management of lands in the NWR System.[103] It amended the 1966

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[97] *Pelican Island and the Start of the Wildlife Conservation Movement*, U.S. FISH & WILDLIFE SERV., *available at* https://npshistory.com/brochures/nwr/pelican-island-story.pdf.
[98] National Wildlife Refuge System Administration Act of 1966, Pub. L. 89-669, 80 Stat. 927 (current version at 16 U.S.C. § 668dd).
[99] 16 U.S.C. § 668dd(a)(1).
[100] U.S. Fish & Wildlife Serv., *National Wildlife Refuge System*, https://www.fws.gov/program/national-wildlife-refuge-system (last visited July 18, 2024).
[101] U.S. Fish & Wildlife Serv., *Wetland Management District*, https://www.fws.gov/glossary/wetland-management-district (last visited July 12, 2024).
[102] *Id.*
[103] National Wildlife Refuge System Improvement Act of 1997, Pub. L. 105-57, 111 Stat. 1252 (1997).

law by revitalizing the mission of the NWRS, clarifying the compatibility standard for public uses of the national refuges, and requiring completion of a comprehensive management plan for each individual refuge.[104] However, the amendments added a provision stating that the law "does not create a reserved water right, express or implied."[105] Federal courts have not addressed the full implications of this provision on potential water rights of NWRs. It could be that it only applies to NWRs created after 1997 and does not impact the ability to assert water rights on refuges established prior to the amendment. This issue has been raised as a counterargument to a reserved water rights claim on an NWR in Georgia, which will be discussed in the next section.

a. Water Management Considerations for Non-Tribal Reservations

Designation as a National Wildlife Refuge, Park, Monument, or Forest affords certain protections. All activities occurring on lands in the NWR System must not "materially interfere with or detract from the fulfillment of the mission of the [NWRS] or the purposes of the refuge," a determination made by the Secretary of the Interior.[106] That is not a strict standard, as there are extensive oil and gas operations on NWRs across the country.[107] There are, however, water needs on NWRs that could give rise to a reserved water rights analysis. As discussed above, the basis of federal reserved water rights in *Winters* extends to federal lands reserved for other purposes, namely conservation.[108] In considering whether an NWR might be entitled to reserved water

[104] *Id.*
[105] 16 U.S.C. § 668dd(n)(1)(A).
[106] 16 U.S.C. § 668dd(a)(3).
[107] *See* R. ELIOT CRAFTON, LAURA B. COMAY, & MARC HUMPHRIES, CONG. RSCH. SERV., R45192, OIL AND GAS ACTIVITIES WITHIN THE NATIONAL WILDLIFE REFUGE SYSTEM (2019), *available at* https://sgp.fas.org/crs/misc/R45192.pdf.
[108] *See* Arizona v. California, 373 U.S. 546, 601 (1963).

depends on the date of creation, the stated primary purpose of the refuge, and mechanism by which it was established.[109] The existence of threatened or endangered species, migratory bird breeding grounds, or other protected ecological values could influence the water rights analysis.

In *Cappaert v. United States*, the U.S. Supreme Court held that the United States "can protect its water from subsequent diversion, whether the diversion is of surface or groundwater" based on the necessity for the purpose of the reservation, which in that case, was created to preserve an aquatic pool of outstanding scientific purpose supporting rare species.[110] In determining whether there are federally reserved water rights implicit in a federal reservation of public land, the issues turns on "whether the Government intended to reserve unappropriated, and thus available water."[111] The Court acknowledged the connectivity between surface and groundwater but did not address how the *Winters* doctrine would apply exclusively to groundwater.[112] This question of groundwater and reserved rights will become more important as groundwater depletion further impacts surface water availability in NWRs and other non-tribal reservations.[113]

[109] These are typically enumerated in the measure creating the specific NWR.
[110] 426 U.S. 128, 141-43 (1976).
[111] *Id.* at 139.
[112] *Id.* at 142-43.
[113] *See* Rachel Esralew, Benjamin Newman, & Jennifer L. Wilkening, EXAMINATION OF CLIMATE-RELATED THREATS TO WATER RESOURCES IN THE NATIONAL WILDLIFE REFUGE SYSTEM, U.S. FISH & WILDLIFE SERV. (Nov. 2023), *available at* https://www.fws.gov/sites/default/files/documents/FWS%20WRIA%20Climate%20Focused%20Threats%20and%20Needs%20Report%20Final%20Section%20508%20compliant.pdf.

b. National Wildlife Refuges in the Mississippi River Corridor

There are over 100 NWRs in the Mississippi River's ten main stem states that protect lands for various purposes, including providing for the passage of migratory birds and waterfowl, supporting habitats for protected species, and preserving sites of ecological importance, among many others. There are also eleven WMDs in these states—eight in Minnesota, two in Wisconsin, and one in Iowa.[114] Beyond NWRs, there are a variety of other federal lands in the Mississippi River Corridor, including several major National Parks, National Historic Parks, National Monuments, and National Forests.[115] There are many more federally reservations along the major tributaries of the Mississippi River outside the main stem states, each with potential reserved water rights to meet the needs of their stated purposes.

IV. PLANNING FOR WATER RIGHTS ON FEDERAL RESERVATIONS

As climate change alters the landscape of the Eastern United States, the circumstances surrounding federal reserved rights will likely occur more frequently with droughts causing more water shortages and exacerbating issues with overstressed water resources. Freshwater availability in the future will be impacted by several climate-related factors: 1) higher temperatures will increase evaporation and water loss from waterbodies and through plants, potentially leading to reduced freshwater availability, 2) sea level rise will accelerate the rate of saltwater intrusion into

[114] *See* U.S. Fish & Wildlife Serv., *Our Facilities*, https://www.fws.gov/our-facilities?type=%5B%22National%20Wildlife%20Refuge%22%5D (accessed July 20, 2024).
[115] *See* U.S. Dep't Interior, *America's Public Lands Explained*, https://www.doi.gov/blog/americas-public-lands-explained (last visited July 24, 2024).

coastal drinking water intakes and freshwater resources, which could lead to increased drilling of new wells in inland areas, and 3) rising temperatures may increase demand for agricultural irrigation.[116] If state governments do not analyze and account for water needs of Native American reservations and other federal properties, there could be a rise in inter-government tensions and disputes if these conditions persist.

Under prior appropriation, the notion of protecting senior users lends itself to incorporating reserved water rights because the date of the reservation or agreement can help determine where in the priority system it falls, protecting against harms by more junior users. Some critics argue that the *Winters* doctrine applies only to the prior appropriation doctrine, but this is a misguided notion.[117] Many Western territories that eventually became states initially followed the riparian doctrine.[118] *Winters* was based on a dispute in Montana, and the system at place at the time of that treaty was based on riparian rights.[119] Prior to statehood, the Montana territorial legislature adopted English common law until that was displaced by further legislation.[120] In 1865, the legislature passed a bill indicating the riparian doctrine would be followed, with the caveat that persons could divert water for irrigation.[121]

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[116] *See generally* U.S. Env't Prot. Agency, *Climate Change Impacts on Freshwater Resources*, https://www.epa.gov/climateimpacts/climate-change-impacts-freshwater-resources (last visited July 24, 2024).
[117] *See* Royster, *supra* note 13, at 192-93.
[118] *See* JOSEPH DELLAPENNA, DUAL SYSTEMS, WATER AND WATER RIGHTS, THIRD EDITION § 8.02 (discussing Montana's history of riparian rights and prior appropriation).
[119] Earsom, *supra* note 50, at 77-78.
[120] *Id.*
[121] *Id.*

Moreover, reserved rights are independent of state law, at least to the extent there is unappropriated water under state law.[122] In the case of *Mattaponi Indian Tribe v. Commonwealth*, the Mattaponi Tribe, which is recognized by Virginia's state government but not the federal government, sought to protect its water rights against a proposed reservoir that would take water from the Mattaponi River.[123] The Tribe based its claim on both riparian rights and the federal reserved water rights doctrine, citing the 1677 Treaty at Middle Plantation.[124] The court acknowledged that federal reserved water rights could potentially apply at the state level, even for tribes lacking federal recognition, by drawing on the *Winters v. United States* principle of implied reservation of water for Native American reservations.[125] The court held that the Tribe failed to demonstrate the necessity element of the *Winters* doctrine.[126] Nonetheless, it did not entirely rule out the possibility of applying federal reserved water rights in riparian states. This suggests that, if a tribe could show that state riparian law does not provide the necessary amount of water to sustain the reservation's purpose, they might succeed in asserting such rights.[127] This reasoning supports the notion that federally recognized tribes in riparian states have an argument for federal reserved water rights.

[122] Cappaert v. United States, 426 U.S. 128, 138 (1976).
[123] 2007 WL 6002103 (Va. Cir. Ct. 2007).
[124] *Id.* at *2.
[125] *Id.* at *10. However, the court expressed skepticism about the necessity of federal reserved water rights in riparian states like Virginia, which ensure reasonable use of water for all riparian owners. *Id.* at *14.
[126] The court found that the Tribe did not adequately demonstrate that the water was essential to the Tribe's present and future needs in a way that would satisfy the doctrine's requirements. *Id.* at *16.
[127] *Id.*

a. Incorporating Reserved Water Rights into Riparian State Regimes

Tribes and other federal land managers will face challenges in securing water rights under the riparian systems, where they can be overshadowed by more powerful private landowners. In the absence of judicial precedent for federal reserved water rights in the Eastern United States, Mississippi River states might focus on modifying regulated riparian rights. This will help secure these rights in a proactive manner and reduce the likelihood of drawn-out litigation in the future as climate change decreases the amount of water available in the East.

Aspects of regulated riparian regimes could be tailored to accommodate potential reserved rights claims, or alternatively, integrated into state water management practices to ensure equitable consideration of all water users and needs. Riparian systems are based on the proportional sharing of water among landowners adjacent to the watercourse, without regard to the seniority of users.[128] The riparian doctrine of reasonable use requires balancing various interests and uses of water, which may not easily accommodate the fixed and senior rights reserved for tribes and other federal lands.[129] In riparian jurisdictions without a priority system, the state must integrate reserved water rights into the statewide system for water administration, ensuring that these rights are not compromised.[130]

Delving in, the modification of regulated riparian rights offers a practical approach because they 1) minimize legal conflicts and facilitate the integration of federal reserved water rights into

[128] *See* ANTHONY DAN TARLOCK & JASON ANTHONY ROBINSON, LAW OF WATER RIGHTS & RESOURCES § 3:7 (July 2023).
[129] *See* Royster, *supra* note 13, at 197.
[130] Earsom, *supra* note 50, at 69.

the state regulatory framework and 2) provide a more flexible framework that can adapt to the specific needs and circumstances of different water users, including tribal entities.[131] Regulatory agencies can prioritize water uses that benefit the public interest, which is harder to achieve in systems where water rights are difficult to reallocate. Most importantly, a regulatory system centralizes decisions and is overall more efficient (if the agency is properly staffed and funded). Most of the main stem states employ regulated riparianism, and for those that do not, a comprehensive regulated riparian doctrine is the most feasible to implement to account for the water needs of tribal and non-tribal reservations. States might consider modifying reasonable use considerations in their regimes, either through legislation or regulations. The Seminole Tribe of Florida's approach, discussed below, secured water rights without any major doctrinal overhaul, instead establishing a legally binding agreement that clarified and secured the Tribe's water rights.[132]

b. Examples of Reserved Rights in the Eastern United States

While there is not an established framework for federal reserved rights in riparian jurisdictions, there is one tribal water rights settlement in the East. Moreover, a recent development on the Okefenokee National Wildlife Refuge in Georgia raises interesting considerations for reserved rights going forward. While these two examples are not in the

[131] Joseph Dellapenna, *The Evolution of Riparianism in the United States*, 95 MARQ. L. REV. 53, 87-88 (2011).
[132] WATER RIGHTS COMPACT AMONG THE SEMINOLE TRIBE OF FLORIDA, THE STATE OF FLORIDA, AND THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT (1987), *available at* https://www.sfwmd.gov/sites/default/files/documents/water_rights_compact.pdf [hereinafter SEMINOLE WATER COMPACT].

Mississippi River Corridor, they provide a lens into potential models and frameworks to consider more broadly in states with riparian and regulated riparian rights systems.

i. Seminole Tribe of Florida

The Seminole Tribe of Florida was the first Tribe in the Eastern United States to successfully establish federal reserved water rights, although in a unique manner.[133] In 1987, the Seminole Tribe entered into a Water Rights Compact with the State of Florida and the South Florida Water Management District ("SFWMD").[134] This Compact came about when the Florida government in 1950 conveyed a flowage easement over reservation lands with no compensation to the Tribe, effectively flooding their land and creating a lake.[135] Over time, development caused ecological damage to the region.[136] Eventually, the Tribe, Florida, and SFWMD reached an agreement in the Water Rights Compact, which recognized a unique application of federal water rights in place of rights established under the *Winters* doctrine.[137] Congress subsequently ratified the Compact, giving it the force of federal law, making the Tribe unique among other waters users in Florida, and the East generally.[138] This substitution meant that instead of relying on the potentially broader rights under the *Winters* doctrine, the Tribe accepted rights as expressed a percentage of available water from specified sources.[139]

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[133] Royster, *supra* note 13, at 170.
[134] SEMINOLE WATER COMPACT, *supra* note 132.
[135] Shore & Straus, *supra* note 30, at 4-5.
[136] *Id.* at 5.
[137] *Id.* at 9-11.
[138] Seminole Indian Land Claims Settlement Act of 1987, Pub. L. 100-228, 101 Stat. 1666 (1987).
[139] SEMINOLE WATER COMPACT, *supra* note 132, at 24-25.

The basis of the Compact provides that the Tribe may use the water for consumption as long as it is reasonable and there are no adverse environmental impacts.[140] In regards to groundwater, the Tribe eventually agreed to a dilution of its groundwater preference rights since it entered into private agreements with neighboring landowners who had water necessities.[141] As to surface water management, the Tribe must reasonably fulfill the Compact's enumerated general criteria.[142] To address water shortages on the reservation, SFWMD modified canal regulations to ameliorate the water shortages, and the Compact defined a share of available surface water in the basin that would be allocated to the Tribe as a minimum entitlement (akin to quantified water rights in the West).[143] Ultimately, while the Tribe maintains much autonomy over basic procedural aspects of their water rights and management, as well as some occasional preferential treatment in groundwater management, the Tribe might have limited itself from ever broadening the scope of its water rights in the interest of avoiding litigation with the state.[144] Aspects of this process could be a model for other federal tribes looking to establish some base level water protections on reservations.

[140] *Id.* at 20.
[141] *See id.* at 24.
[142] *Id.* at 20-21. (Rules: "1. provides adequate flood protection and drainage; 2. will not cause significant adverse water quality and quantity impacts on receiving waters and non-Tribal lands; 3. will not cause discharges to ground or surface waters which result in any violation of State water quality standards; 4. will not cause significant adverse impacts on surface and groundwater levels and flows; 5. will not cause significant adverse environmental impacts; 6. can be effectively operated and maintained; 7. Will not adversely affect public health and safety; 8. will not otherwise be harmful to the water resources of the District; and 9. is consistent with the essential terms and principles of the State System as defined in the Compact)
[143] *Id.* at 25-27.
[144] *Id.* at 20.

ii. Okefenokee National Wildlife Refuge

The lack of precedent for reserved water rights in the East leaves uncertain their application on non-tribal reservations as well. A significant development is set to occur following the federal government's assertion of its reserved water rights to protect the Okefenokee Swamp in Georgia from a large mining project.[145] Several years back, before this current water debate arose, the U.S. Army Corps of Engineers entered into a settlement with the mining company, in which it agreed to not exercise its Clean Water Act authority over the proposed project, raising concerns about federal oversight and the future of the Okefenokee.[146] In an effort to reassert some federal control over the proposed project, the FWS claims that it has reserved water rights" in the 684-acre Okefenokee National Wildlife Refuge, which the federal government has managed since the 1930s.[147] In response to a Georgia state water withdrawal permit for the proposed titanium mine on the edge of the swamp, the FWS intervened, arguing the project could deplete groundwater essential to the swamp's ecosystem.[148] The FWS Southeast Regional Director emphasized the federal government's ability to reserve water when establishing public lands and highlighted the need for further research to understand the water requirements of the swamp

[145] Hannah Northey, *Feds Assert Water Rights to Fight Mine Near Okefenokee Swamp*, E&E NEWS (May 14, 2024), https://subscriber-politicopro-com.libproxy.tulane.edu/article/eenews/2024/05/14/feds-asserts-water-rights-to-fight-mine-near-okefenokee-swamp-00157871.
[146] Russ Bynum, *Company: Legal Settlement Puts Okefenokee Mine Back on Track*, ASSOCIATED PRESS (Aug. 22, 2022), https://apnews.com/article/lawsuits-georgia-wildlife-army-90389deefb681953d68fd69cb2054e2d.
[147] Northey, *supra* note 145.
[148] Letter from U.S. Fish & Wildlife Serv. to Mr. Richard Dunn,, Director, Ga. Env't Prot. Div. (Mar. 17, 2024), *available at* https://www.fws.gov/sites/default/files/documents/Letter_RD%20to%20GA-EPD_TwinPines%20Signed.pdf.

fully.[149] He cited the Migratory Bird Conservation Act of 1937, which established the refuge, as a basis for these reserved water rights.[150] However, the opposing argument is that reserved rights apply to lands originally owned by the federal government, not to lands acquired later.[151]

Twin Pines Minerals, the company behind the mining project, disputes the federal government's claim.[152] The company argues their operations will not significantly impact the water levels of the Okefenokee Swamp and that the National Wildlife Refuge Administration Improvement Act of 1997 negates any claim of "'a reserved water right' for the Okefenokee refuge by requiring the federal agency to follow state law to acquire any land or water rights needed for its refuges."[153] Many fear the proposed mine could harm the Okefenokee's ecosystem and exacerbate climate change impacts by turning the swamp from a carbon sink into a carbon source.[154] The outcome of this dispute could set a significant precedent for federal water rights in the Eastern United States, especially as climate change impacts intensify

V. ADDITIONAL CONSIDERATIONS AND CONCLUDING THOUGHTS

Though the question of federal reserved rights in the East is unresolved, states can look to more recent developments in tribal regulatory programs to understand the importance of

[149] Northey, *supra* note 145.
[150] *Id.*
[151] *Id.*
[152] *Id.*
[153] *Id.* (Jones, the lawyer for Twin Pines, highlighted a separate study and insisted it showed the proposed mine would not reduce groundwater feeding the swamp: "And, the discussion is moot, in any event, because the groundwater model prepared by National Academies fellow Dr. Sorab Panday, which [the Georgia Environmental Protection Division] has independently validated, shows the project will not measurably reduce groundwater contributions to, or have any other material impact on [the refuge]," he said.)
[154] *Id.*

accounting for water needs on reservations. Federally recognized tribes can exercise authority over water resources on reservations under the federal Clean Water Act's treatment as a state provision.[155] Like states, tribes can assume authority from EPA to administer their own water quality standards ("WQS") programs.[156] To date, EPA has determined eighty-four tribes to be eligible to administer WQS programs, seven of which are in the Mississippi River Corridor.[157] Ongoing federal initiatives reiterate the importance of tribal authority and autonomy over natural resources. In April 2024, EPA finalized a rule that revised water quality standards with respect to how states and the EPA consider reserved rights in crafting water quality standards.[158] Recently proposed National Environmental Policy Act Standards direct federal agencies, including the U.S. Army Corps of Engineers, to consider tribal water rights in federal projects.[159] Further, the Army Corps is in the midst of a Lower Mississippi River Comprehensive Management Study which has involved tribal consultation.[160]

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[155] 33 U.S.C. § 1377(e).
[156] *See id.* Tribes also have the opportunity to administer programs under the Safe Drinking Water Act. 42 U.S.C. § 300j-11 (pertaining to Public Water System Supervision).
[157] U.S. Env't Prot. Agency, *EPA Action on Tribal Water Quality Standards and Contacts*, (last visited July 22, 2024), https://www.epa.gov/wqs-tech/epa-actions-tribal-water-quality-standards-and-contacts; Those tribes are: The Bad River Band of Lake Superior Chippewa (WI), Fon du Lac Band of Minnesota Chippewa (MN), Grand Portage Band of Minnesota Chippewa (MN), Lac du Flambeau Band of Lake Superior Chippewa (WI), Leech Lake Band of Ojibwe (MN), Red Lake Band of Chippewa (MN), Sokaogan Chippewa Community (WI), and Sac & Fox Tribe of the Mississippi in Iowa (IA). *Id.*
[158] Water Quality Standards Regulatory Revisions to Protect Tribal Reserved Rights, 89 Fed. Reg. 35717 (2024) (codified at 40 C.F.R. § 131).
[159] National Environmental Policy Act Implementing Regulations Revisions Phase 2, 89 Fed. Reg. 35442 (2024) (codified at 40 C.F.R. § 1501.3(d)(2)(viii).
[160] U.S. ARMY CORPS ENG'RS LMR COMP QUARTERLY UPDATE, 14, 46 (June 20, 2024), *available at* https://www.mvn.usace.army.mil/Portals/56/docs/PD/Projects/LMR%20Comp%20Quarterly%20Public%20Update_ForWebsite.pdf?ver=89Ee1PSZfkmwLrA9sSApTw%3d%3d.

Effective integration of federal reserved rights will require addressing historical, legal, and ecological challenges while protecting both tribal reserved rights and the water necessities of neighboring riparian landowners. As climate change alters water availability, the East will be increasingly likely to have to confront this issue head-on. Currently, none of the Mississippi River main stem states have adequate mechanisms that can account for potential federal reserved rights. Federal, state, and local governments and agencies can minimize future litigation by accounting for existing rights and uses of water in the Mississippi River Corridor and ensuring the proper legal frameworks are in place to protect tribal and non-tribal reserved rights. While this paper does not propose a specific method or measure to incorporate federal reserved water rights into state water law and policy, state officials must begin having these conversations with tribes and federal agencies. Without proper water supply planning that accounts for all existing rights and uses in the Mississippi River system, the consequences will almost certainly be inequitable.