

# Study reveals the changing scope of Native American groundwater rights

August 3 2018, by Josie Garthwaite

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Credit: AI-generated image ([disclaimer](#))

California's Coachella Valley may be ground zero for a new chapter in water rights for Native American tribes, according to a new Stanford study published in the journal *Science*.

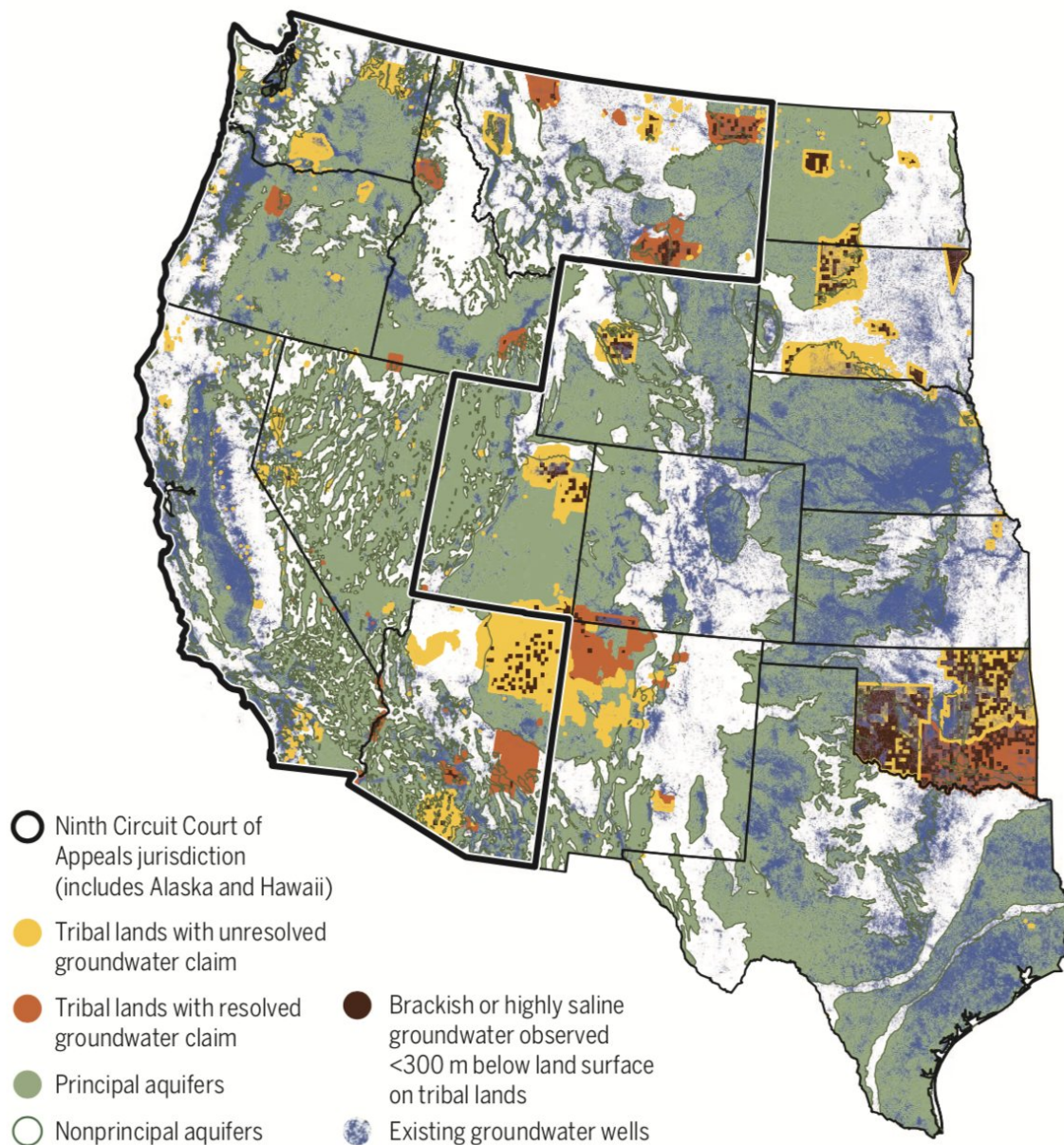
Better known for lush golf courses, glittering pools, a popular music

festival and temperatures topping 120 degrees, this inland desert is also home to the Agua Caliente Band of Cahuilla Indians, which has fought since 2013 for federal courts to affirm its right to groundwater beneath its reservation. Lower courts ruled in the tribe's favor, and in late 2017 the U.S. Supreme Court denied an appeal.

Observers immediately recognized that the decision could set a powerful precedent for tribal groundwater claims, which have suffered murky legal status for more than 100 years. But how much groundwater is at stake as tribes assert this newly bolstered right – and where these claims may clash with nontribal users in an increasingly arid West – remained uncharted until now.

## **Sizing up water rights**

The study reveals that court decrees and settlements have resolved or proposed rights for tribes in western states to use more than 10.5 million acre-feet of surface water and groundwater annually. To put that in perspective, this would be nearly enough water to irrigate all of the alfalfa, almond and rice fields in California for a year. "It's a major volume," said lead author Philip Womble, a Ph.D. student in environment and resources in the Stanford School of Earth, Energy & Environmental Sciences (Stanford Earth).



Most unresolved Native American claims to groundwater exist in areas where there's reason to believe major aquifers could yield significant amounts of groundwater, including in some places where nontribal wells already dot the landscape and increased pumping by tribes might disrupt their production.  
Credit: Philip Womble



Before the Agua Caliente ruling, the study shows, tribal rights exclusively for groundwater made up a small portion – 4 percent – of all tribal freshwater rights in 17 western states. Now, more tribes will likely seek to resolve their rights to control and use water from the aquifers beneath their land, according to Womble and his co-authors, who include Water in the West executive director and Woods Institute of the Environment professor Leon Szeptycki, as well as Water in the West non-resident fellows Debra Perrone and Rebecca Nelson.

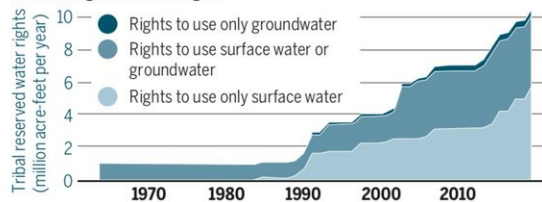
This shift comes at a time when questions of who owns the aquifer and how they can use the water holds increasing urgency, as western states face the likely prospect of demand outstripping the supply of legally available freshwater in most western watersheds by 2030.

"Indigenous communities in several countries have struggled to gain rights to their natural resources," said study co-author Steven Gorelick, a professor of Earth system science at Stanford Earth and director of the Global Freshwater Initiative. Almost half of all homes on Native American land lack adequate access to drinking water or waste disposal facilities, compared to less than 1 percent for U.S. homes overall. The Agua Caliente ruling, Gorelick said, "is a very important step forward in restoring balance to those injured Native American tribes."

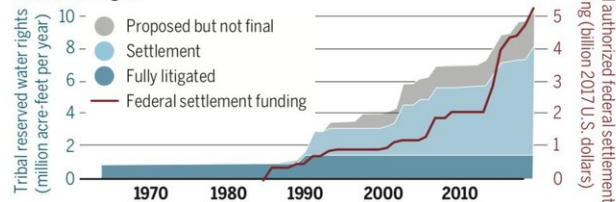
## Competing for a precious resource

In the Coachella Valley, the Agua Caliente tribe has for decades purchased water from local agencies, which have pumped so much water from the region's aquifers that the land is sinking. Now, as the next phase of Agua Caliente's lawsuit unfolds in federal court, the [tribe](#) is seeking to have judges put a number on its groundwater rights, establishing how much water it can pump from the Coachella Valley aquifer – potentially before most other users are entitled to a single drop.

Annual volume of resolved and proposed tribal surface water and groundwater rights



Status and type of resolution for resolved and proposed tribal water rights



Before the Agua Caliente ruling in late 2017, tribal rights exclusively for groundwater made up a just 4 percent of all tribal freshwater rights in 17 western states. Credit: Philip Womble

Today, the study shows, fewer than 60 tribes in the western U.S. have this level of legal certainty around their rights to fresh water from any source – whether from lakes and rivers on the surface, or from aquifers underground. Many more tribes have unresolved rights: According to the study, as many as 236 tribes in the western U.S. have lands with groundwater rights that have not been finally quantified in court or in settlements. In all, the research suggests, tribes control at least some water from so many aquifers across the West that any plan to sustainably manage water in the region would be incomplete without considering their role.

These unresolved groundwater claims span large swaths of Arizona, Oklahoma, South Dakota and Utah, and smaller clusters can be found in all other western states except Colorado. Most of them exist in areas where there's reason to believe major aquifers could yield significant amounts of groundwater, including in some places where nontribal wells already dot the landscape and increased pumping by tribes might disrupt their production.

## Ripple effects for laws and markets

"Court disputes usually focus on the specific facts of a given case," said Womble, who specializes in water policy in the Emmett Interdisciplinary Program in Environment and Resources (E-IPER) at Stanford Earth. He is also an attorney. His team has captured a bigger picture that could help inform decisions about groundwater management throughout the U.S. and in other countries that recognize indigenous community water rights, including Australia, Canada, Chile and New Zealand.

"Even though a U.S. court decision clearly isn't binding in another country," Womble said, "it could provide a persuasive precedent that courts confronting this issue in other nations might look to." Historically, he said, courts in Canada and Chile have adopted some terminology and approaches from U.S. water law.

Already, Gorelick added, the study results suggest that the creation of market-based systems for renting water rights could work to indigenous communities' advantage. "With this ruling," he said, "Native American tribes with higher priority rights are now in the driver's seat to potentially benefit from participating in [water](#) markets."

**More information:** Indigenous communities, groundwater opportunities. *Science* 03 Aug 2018: [DOI: 10.1126/science.aat6041](https://doi.org/10.1126/science.aat6041)

Provided by Stanford University

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