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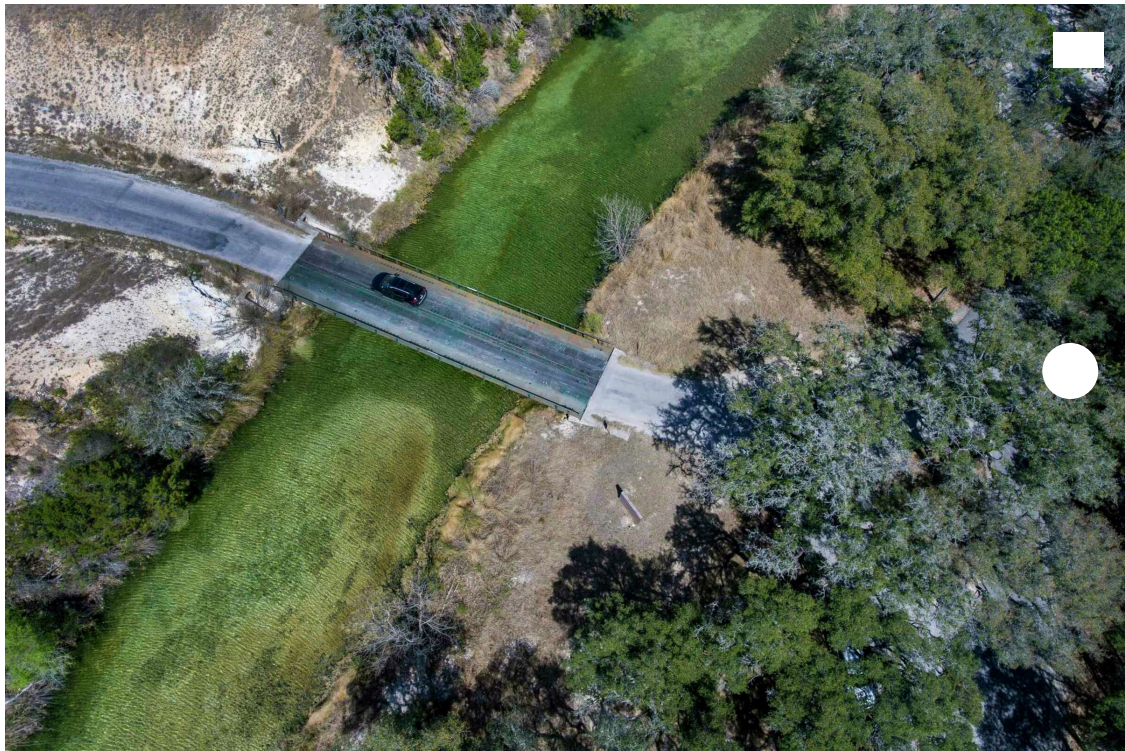
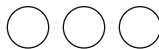
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NEWS // TEXAS HILL COUNTRY

# 'Tipping point': Waters under fire in Texas Hill Country as development, population boom

Annie Blanks, San Antonio Express-News

April 3, 2022



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Algae blooms in upper Cibolo Creek as a car crosses Bella Springs Road.

William Luther /Staff photographer

The Texas Hill Country has long been lauded as the Land of 1,100 Springs, but there's trouble brewing in those pristine waters.

The area is growing at breakneck speed. More people are drawing water from a finite supply. More are putting wastewater — which helps habitat-wrecking algae thrive — into treasured sanctuaries for endangered species.

"Since 2005, the Hill Country has grown in population by over 50 percent," said Vanessa Puig-Williams, the director of the Texas Water program for the Environmental Defense Fund. "So, where is all that water going to come from, and where is it all going to go when we're done using it?"

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Those two questions — where to get water for the 3.8 million people who live in the Hill Country, and what to do with that water once it's flushed, drained and dumped from people's homes and businesses — are at the crux of how the region possibly can sustain the next 10 to 20 years of growth.

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Is there a way, for instance, to effectively welcome an expected 35 percent more residents by 2040 while keeping the waterways pristine and the aquifers sufficiently charged?

"We're not going to stop people from coming here, and that's fine. Everybody gets to have a piece of the Hill Country if they want to," said Jennifer Walker, the deputy director of the Texas Coast and Water Program for the National Wildlife Federation. "What I think we need to be mindful of

is that we're not bringing our urban water use aesthetic into the Hill Country, into an area where it's just not sustainable."

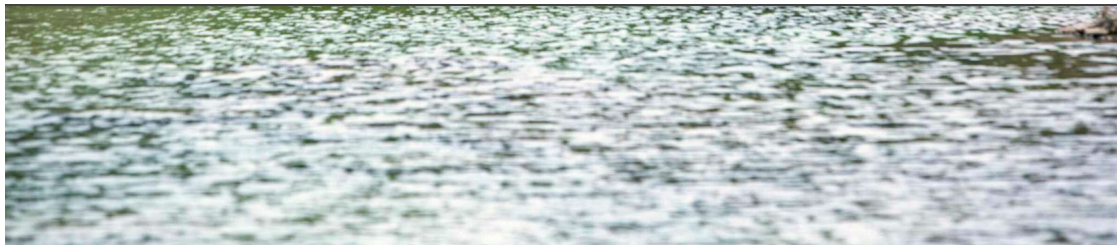
## Land of springs



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**Next Up:** High feces levels reported in the Comal River



Cibolo Creek upstream of Boerne City Lake is seen Tuesday, March 29, 2022.  
William Luther /Staff photographer

Those many springs — however many of them are actually left, no one's

quite sure — supply water to an estimated 4 million Texans. They feed the headwaters of 12 major rivers that call the Hill Country home and snake through Central Texas before reaching the Gulf of Mexico.

The springs, lakes, rivers and streams of the Hill Country are home to several endangered species, like the Texas blind salamander in the San Marcos River. The rivers both feed and are fed by the Edwards and Trinity aquifers, large underground natural water tanks on which all Central Texas depends for clean water.

And besides being abundant, 1,142 miles of streams in the Hill Country have been designated “pristine.” That’s how the Texas Commission on Environmental Quality describes rivers that contain no detectable level of phosphorus, a component of wastewater. Just 40 of the more than 2,000 streams across Texas are considered pristine, and the majority of them are in the region, according to the nonprofit Hill Country Alliance, which compiled a State of the Hill Country report.

But just as a dollop of dirt can taint an entire glass of water, so, too, can thousands of new developments taint the natural waterways of the Hill Country.

As of 2018, for instance, there were permit applications to dump at least 2.1 billion gallons of treated wastewater each year into Hill Country waters, according to the 2021 State of the Hill Country report. That wastewater, even if highly treated, contains high levels of phosphorous that can cause algae blooms, threaten endangered species, and jeopardize the natural beauty of all the region’s bodies of water.

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The crystal-clear streams, creeks, rivers and lakes also are menaced increasingly by stormwater runoff, airborne pollutants, agricultural runoff, damming sections of the rivers for new developments, and increased water use.

## Groundwater usage

Milan J. Michalec, president of the Cow Creek Groundwater Conservation District, talks Tuesday, March 29, 2021, about the district's rainwater-collection system.

William Luther /Staff photographer

Think of the Edwards and Trinity aquifers as two large glasses of drinking water with one or two straws in each. As more and more people move to the Hill Country, more straws are put into the glasses, and more people take drinks out of them. The aquifers, particularly the Trinity, aren't automatically refilled — they require sufficient rainwater and competent water management in order to keep them recharged.

Due to geological barriers, the Trinity recharges at 1 to 2 inches a year, said Margo Denke Griffin, a local water activist and secretary of the environmentalist group Friends of Hondo Canyon.

"So imagine a big straw in there that pulls all the water out," she said. "Once it's gone, it's gone."

According to the 2021 State of the Hill Country report, there are vast differences in water use metrics across the 18 counties that make up the region. San Antonio residents, for instance, use on average about 120 gallons of water — or 1.7 full bathtubs — each day. Travis County residents, by contrast, use on average 783 gallons, or 11 full bathtubs, each day.

Throughout much of the western portions of the Hill Country, like Uvalde, Mason, Bandera and Kerrville, residents use between 135 and 200 gallons per day, on average. The number creeps up steadily around the immediate outskirts of metro areas and in the metro cities themselves.

The state of Texas has a bit of a patchwork approach to dealing with groundwater management. There are 98 groundwater management districts

across the state of Texas. They are responsible for managing the aquifer supply in their own communities — the issuance of permits for people to drill wells, dump effluent or otherwise drill into the aquifer to begin pumping water into their homes or developments.

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This fractured governance method is by design, said Puig-Williams with the Environmental Defense Fund. Since groundwater has a “highly local aspect” to it — as evidenced by the vast difference in water usage across the region — it makes sense to have local boards of community members who are in charge of managing it.

“It enables landowners who depend on that water and are passionate about it ... (to) have more of a voice than I think you would see if you had more of a statewide management system in place,” Puig-Williams said.

But still, local management has its limits. Ninety-eight different groundwater management districts means 98 different budgets, funding mechanisms, applications of the law, and approaches to the science of groundwater.

Milan Michalec is the Precinct 2 director and the president of the Cow Creek Groundwater Conservation District in Boerne. He cautions against having a “doomsday” view of the groundwater situation in the Hill Country, even though “systems are beginning to become stressed,” he said.

But he said more people should begin to take notice of and care about where their water comes from and where it goes, even if only for economics and personal hygiene.

Water is inevitably “going to cost more in the future,” he said, as it becomes scarcer and as more people want to use it.

And as for hygiene, “the water that you are going to be drinking and bathing in, somebody else used it at some point,” he said. “So you should be very concerned about where and how it’s treated before it’s released back into the environment.”

## Treated wastewater

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Algae blooms in upper Cibolo Creek as it runs through largely undeveloped land between the creek's headwaters and Boerne City Lake.  
William Luther /Staff photographer

What to do with treated wastewater has become increasingly contentious throughout the Hill Country as more people have built homes and businesses.

When someone flushes a toilet, drains a sink, takes a shower, hoses down a dog, fills a pool, or does any number of other things that require fresh, clean water, all that now-dirty water has to go somewhere.

In almost all circumstances, that water is directed through miles and miles of underground pipes before arriving at a wastewater treatment plant, a regional facility in charge of taking dirty wastewater and treating it to Environmental Protection Agency standards so it can become treated effluent. That effluent is then disposed of back into the environment, where ideally, eventually, it goes back into the aquifer and somewhere several years down the line becomes a part of the clean water supply again.

Sometimes that treated effluent is sprayed on golf fields or lawns. Sometimes it's dumped into bodies of water. It's the latter option that has become problematic for the Hill Country, whose ecosystem and pristine streams are too delicate to handle a large — or, often, any — amount of treated wastewater, which is often high in phosphorous.

As more people move to the Hill Country, more land on which treated effluent could be sprayed instead is getting developed, said Walker with the

Texas Water program. So, developers and businesses look to dump the wastewater into rivers, which is becoming a “really big problem.”

“Our rivers can’t handle this wastewater,” Walker said. “The effluent is of a chemical nature that makes our rivers prone to algae blooms and other things.”

Additionally, since the rivers both come from and feed the springs from the Edwards and Trinity aquifers, there’s a desire not to put the treated wastewater directly back into the aquifers.

And yet, millions of gallons of wastewater is dumped into Hill Country streams every day. According to the Hill Country Alliance, between 2017 and 2020, five wastewater discharge points along the heavily growing I-35 corridor between Austin and San Antonio had more than 500 days each of effluent “exceedances,” meaning they dumped more wastewater into the rivers than they were permitted to.

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More often than not over the past few years, keeping wastewater out of Hill Country waterways has come down to grassroots community efforts in small Hill Country towns.

In Comal County in 2018, for instance, landowners who wanted to turn their 560-acre property into a 1,600-home housing development applied for a water discharge permit for Honey Creek. They withdrew the application in 2019 after an uproar among community members who feared the dumped effluent would destroy the pristine water designation of the creek, which flows through Comal County on its way to the Guadalupe River.

The Save Honey Creek initiative galvanized eagle-eyed community members who have continued to keep tabs on the development plans, including, most recently, an attempt at making the Honey Creek area an official state park. It’s one of several small groups that have popped up around the region to protest irresponsible development and water discharge, said Annalisa Peace, executive director of the Greater Edwards Aquifer Alliance.

“When you put a high-density development in and let it discharge sewage effluent into our water bodies, a lot of them end up on the impaired water body list,” Peace said. “We’re not regulating in a manner to adequately protect our springs.”

And in Bandera County, the Bandera Canyonlands Alliance led a grassroots community effort to oppose a water discharge permit filed by Young Life's Camp Lonehollow in Vanderpool. The camp wanted to discharge its treated effluent into the pristine Sabinal River, but withdrew its permit after overwhelming community opposition to the idea.

"Save Our Sabinal" signs popped up around the sleepy Hill Country town, about an hour and a half west of San Antonio. Young Life eventually agreed to use its treated effluent for irrigation.

Many of the "Save Our Sabinal" signs propped up on ranch fences and leaning against property lines now have "we did it!" scrawled across the top.

## Looking forward

Boerne City Lake is seen Tuesday, March 29, 2022.  
William Luther / Staff photographer

Despite the seemingly endless straws that are slated to be put into the aquifers over the next few decades, and the increasing pressure that will surely be put on the region's natural water systems, it's not all doom and gloom.

Organizations and alliances across the Hill Country are working to come up with sustainable solutions that can support all the growth while maintaining the "pristine" stream designations and keeping algae and pollution out of the

water supply.

Case in point: Jacob's Well Elementary School in Wimberley. The 85,000-square-foot school was built in 2020 using a One Water approach. That's a "planning and management approach that rethinks how water moves through and is used in a community," according to the Texas Living Waters Project.

The campus has several features meant to reduce its groundwater usage from the Trinity Aquifer by 90 percent compared to a more traditional construction.

For example, the school uses rainwater and air conditioner condensation for its toilets and irrigation. It also has special infrastructure to help slow stormwater runoff and recharge groundwater more quickly. And then there are the see-through pipes that let students watch water travel throughout the school.

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Jacob's Well Elementary is one example of several small changes that can be made by people in their daily lives to reduce groundwater consumption and be more thoughtful about how they consume and get rid of water.

"There are lots of ways to live on not that much water," Walker said. "Maybe that means you let wildflowers grow in your yard instead of irrigating it, or swimming in a Hill Country river instead of building a pool."

There are more innovative ways to think about disposing of treated effluent, like irrigating ball fields, spraying over undeveloped lands, or using it in toilets like Jacob's Well does.

Communities across the state are adopting more forward-thinking water use policies. Austin, for example, soon will require large developments to collect water on-site and then reuse it instead of letting it drain into waterways.

And organizations like the Edwards Aquifer Alliance are encouraging more people, especially in the Hill Country, to collect rainwater and use it for household purposes rather than use groundwater or plumbing.

Finding more sustainable ways to use water is critical now more than ever

because the Hill Country is at a “tipping point,” Walker said. If more people don’t change their relationship to water, the area’s pristine springs, streams, rivers and creeks could cease to be pristine any longer.

“We’re at a tipping point, where if we don’t become mindful about this — if we overpump our aquifers, dump our wastewater into rivers, and don’t apply water-conservation principals — it could be bad,” she said. “We could do some real damage that could be impossible to reverse.”

*Annie Blanks writes for the Express-News through Report for America, a national service program that places journalists in local newsrooms. ReportforAmerica.org; [annie.blanks@express-news.net](mailto:annie.blanks@express-news.net).*

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BY TAYLOR PETTAWAY

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