HILL COUNTRY WATER RESOURCE MANAGEMENT

Texas Water Law, Hill Country Hydrology, and Current Challenges

Presented by: Marisa Bruno, Water Program Manager

hill country alliance

Hill Country Alliance

The Hill Country Alliance (HCA) is a nonprofit organization working to bring together a diverse coalition of partners to preserve the open spaces, starry night skies, clean and abundant waters, and unique character of the Texas Hill Country.

The Texas Hill Country

A home worth protecting

M A S O N

K I M B L E

L L A N O

B U R N E T

G I L L E S P I E

B L A N C O

T R A V I S

K E R R

E D W A R D S

K E N D A L L

H A Y S

C O M A L

R E A L

B A N D E R A

B E X A R

U V A L D E

M E D I N A

Llano

Burnet

Mason

Junction

Fredericksburg

Johnson City

Luckenbach

Blanco

Dripping Springs

Austin

Georgetown

Round Rock

Marble Falls

Lake Buchanan

Lake LBJ

Lake Travis

Kerrville

Comfort

Rocksprings

Boerne

Bandera

Leakey

Camp Wood

Utopia

Concan

Sabinal

Hondo

Castroville

Knippa

Uvalde

Devine

Medina Lake

Camp Bullis

Camp Bullis Sentinel Landscape Area

Canyon Lake

San Marcos

Wimberley

Bulverde

New Braunfels

Lockhart

Luling

Seguin

San Antonio

Barton Springs (tsa wan pupako)

San Marcos Springs (tjehuae yana)

Comal Springs (saxop wan pupako)

San Antonio Springs (yana wana)

Llano R.

Sandy Cr.

Pedernales R.

S. Llano R.

Guadalupe R.

Blanco R.

Onion Cr.

Jacobs Well

Barton Cr.

Colorado R.

San Marcos R.

W. Nueces R.

Frio R.

Sabinal R.

Hondo Cr.

Seco Cr.

Medina R.

Nueces R.

Cibolo Cr.

San Antonio R.

LEGEND

Edwards Aquifer Recharge Zone

State Park or State Natural Area

Natural Spring

N

Dallas

Austin

San Antonio

Houston

hill country alliance

Working for our land, water, night skies, and communities

INVESTIGATIONS

Kerr County official: Flood was 500+ year 'tsunami'

by: Matt Grant
Posted: Jul 21, 2025 / 03:47 PM CDT
Updated: Jul 21, 2025 / 09:37 PM CDT

Source: KXAN

Canyon Lake is at a historic low, and it's going to get worse. Here's why.

Story by Liz Teitz, Staff writer • 5mo • 5 min read

The drop in Canyon Lake's water level is clear on the north side of the lake on Oct. 23, 2024. Canyon Lake was 53% full when this photo was taken; it's now down to 47% full, and officials expect the water level to continue to drop.
© Marvin Pfeiffer, Staff Photographer

The historic drop in Canyon Lake's water level shows no signs of stopping or slowing, as years of drought continue to take a toll on the Hill Country reservoir.

Source: San Antonio Express News

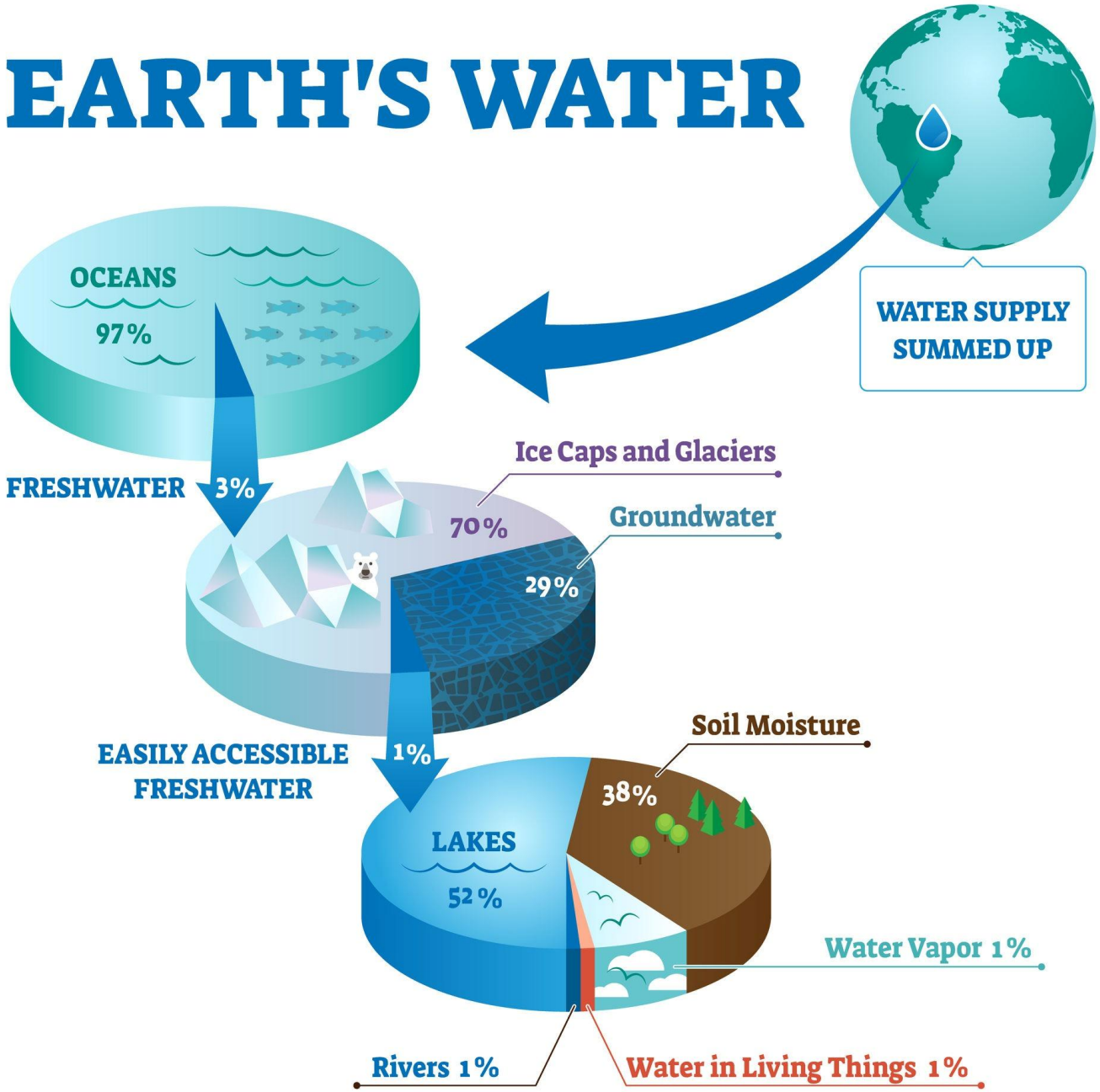
The left image shows what Jacob's Well should look like, and the right image shows the current state of Jacob's Well. (Courtesy David Baker)

Source: KXAN

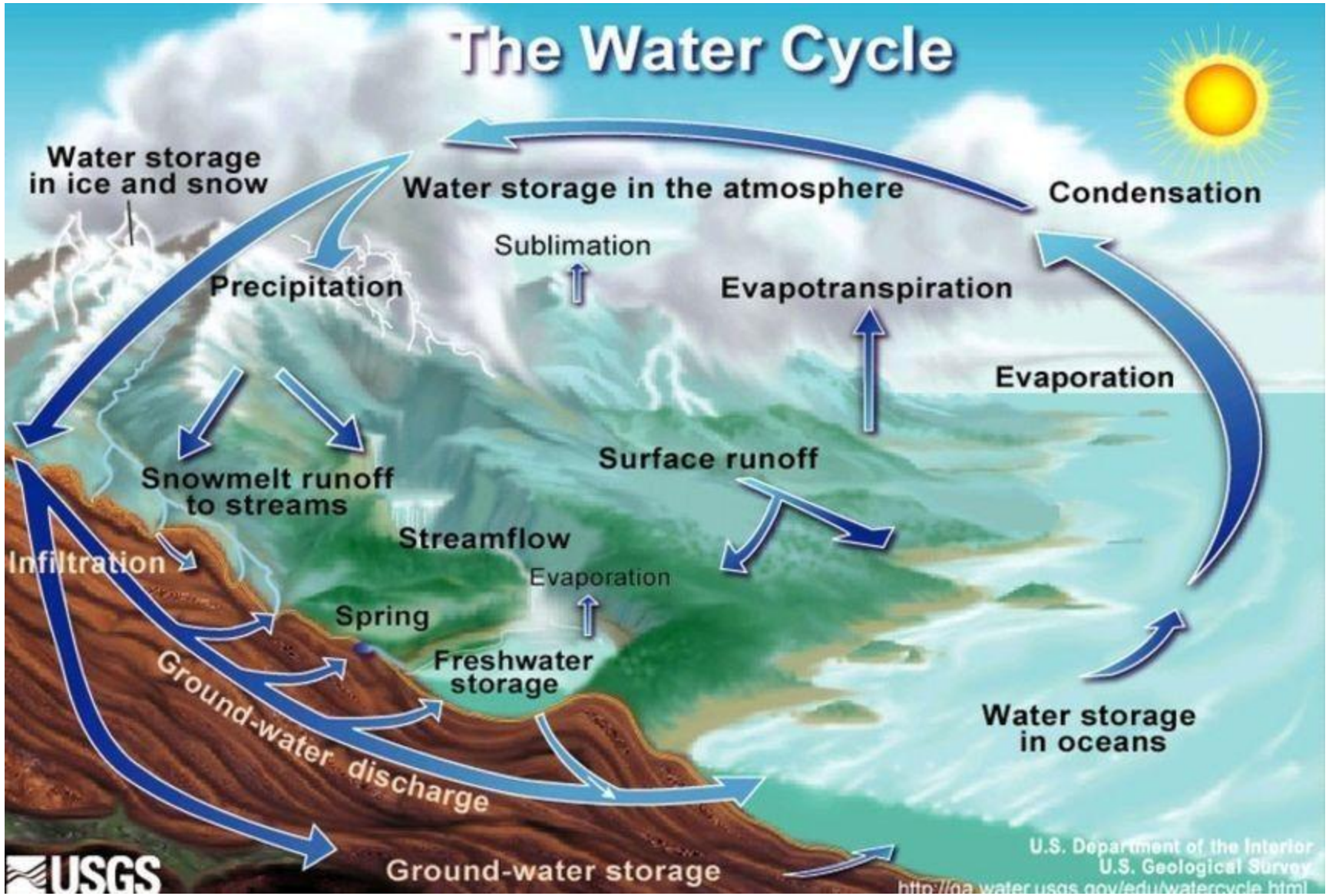
How did we get here and what can we do about it?

What we'll cover

- Basics of Texas Water Law
- Background: Hill Country Hydrology
- Current Challenges Hill Country Water Resources
- Solutions



Source: normaals


The Water Cycle
Water storage in ice and snow
Water storage in the atmosphere
Condensation
Sublimation
Precipitation
Evapotranspiration
Evaporation
Surface runoff
Snowmelt runoff to streams
Streamflow
Infiltration
Evaporation
Spring
Freshwater storage
Ground-water discharge
Water storage in oceans
Ground-water storage
USGS
U.S. Department of the Interior
U.S. Geological Survey

Source: USGS

Basics of Texas Water Law

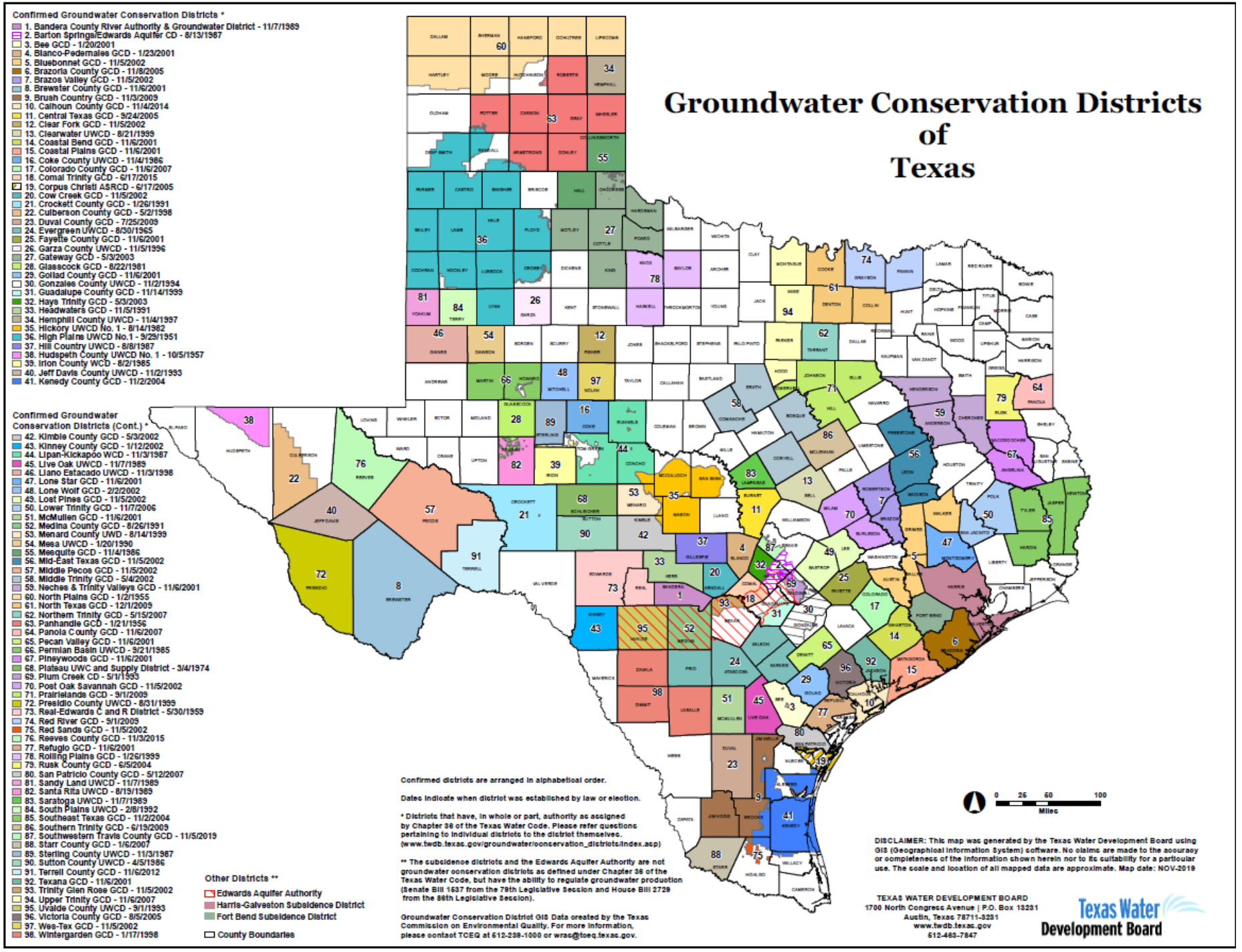
Surface Water

- Owned by the state
- Water rights managed by TCEQ through a permitting system
- Prior Appropriation: Water rights are granted under the rule *"first in time, first in right,"* meaning older (senior) rights have priority during shortages.
- Water rights can be inherited or transferred and keep their priority date
- TCEQ surface water rights are fully allocated

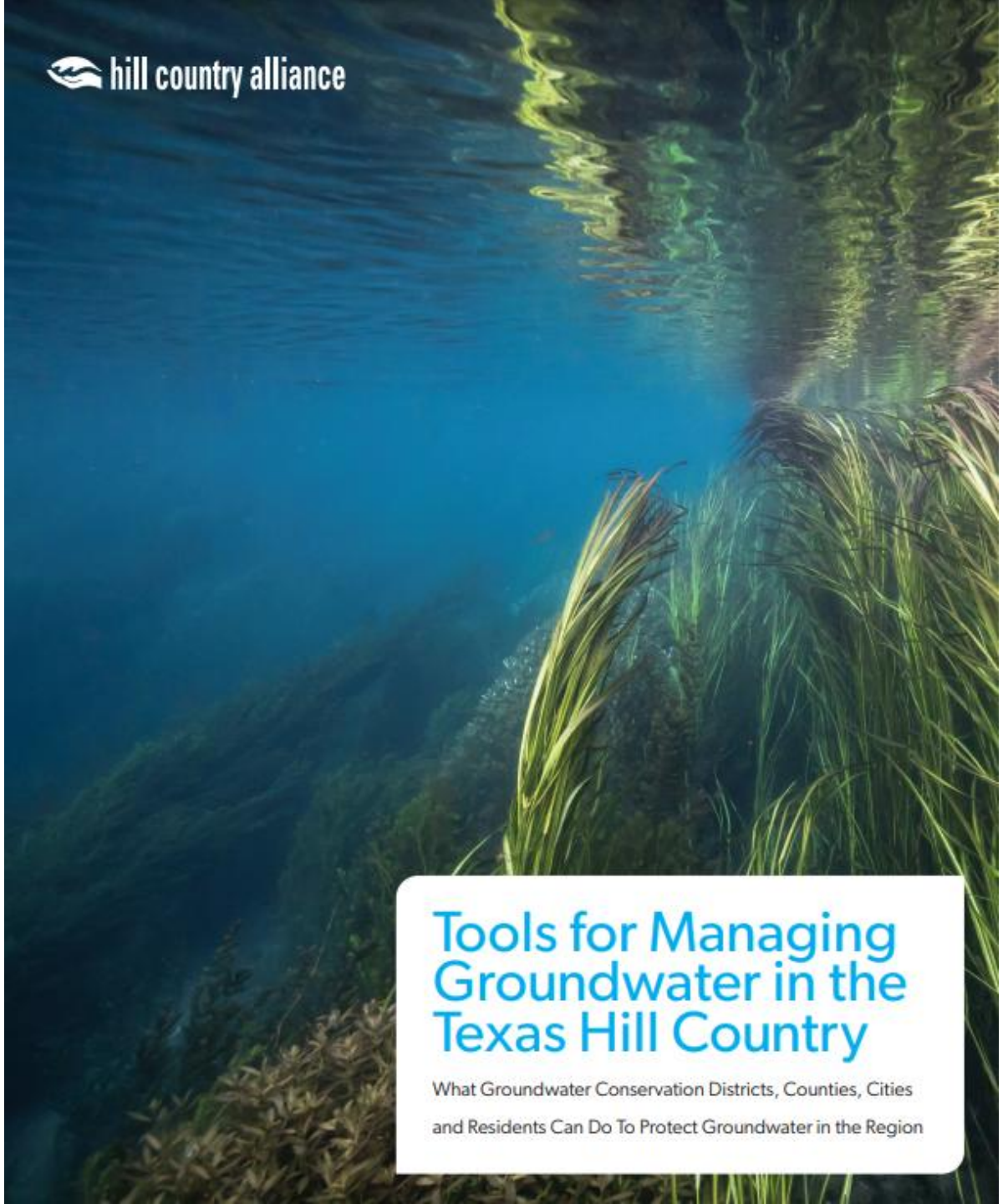
Note: Riverfront landowners may use small amounts for **domestic or livestock purposes** without a permit or water right

Groundwater

- Private property right
- Historically, law of the biggest pump/rule of capture
- Groundwater Conservation Districts → modified rule of capture
- GCDs are not all made equal (local rules and local control)
- Residential & livestock wells are mostly exempt– not subject to any regulation except can't pump more than 25,000 gallons per day


Groundwater Conservation Districts of Texas
Confirmed Groundwater Conservation Districts *
1. Bandera County River Authority & Groundwater District - 11/7/1989
2. Barton Springs/Edwards Aquifer CD - 8/13/1987
3. Bee GCD - 1/20/2001
4. Blanco-Pedernales GCD - 1/23/2001
5. Bluebonnet GCD - 11/5/2002
6. Brazoria County GCD - 11/8/2005
7. Brazos Valley GCD - 11/5/2002
8. Brewster County GCD - 11/6/2001
9. Brush Country GCD - 11/3/2009
10. Calhoun County GCD - 11/4/2014
11. Central Texas GCD - 9/24/2005
12. Clear Fork GCD - 11/5/2002
13. Clearwater UWCD - 8/21/1999
14. Coastal Bend GCD - 11/6/2001
15. Coastal Plains GCD - 11/6/2001
16. Coke County UWCD - 11/4/1986
17. Colorado County GCD - 11/6/2007
18. Comal Trinity GCD - 6/17/2015
19. Corpus Christi ASRCD - 6/17/2005
20. Cow Creek GCD - 11/5/2002
21. Crockett County GCD - 1/26/1991
22. Culberson County GCD - 5/2/1998
23. Duval County GCD - 7/25/2009
24. Evergreen UWCD - 8/30/1965
25. Fayette County GCD - 11/6/2001
26. Garza County UWCD - 11/5/1996
27. Gateway GCD - 5/3/2003
28. Glasscock GCD - 8/22/1981
29. Goliad County GCD - 11/6/2001
30. Gonzales County UWCD - 11/2/1994
31. Guadalupe County GCD - 11/14/1999
32. Hays Trinity GCD - 5/3/2003
33. Headwaters GCD - 11/5/1991
34. Hemphill County UWCD - 11/4/1997
35. Hickory UWCD No. 1 - 8/14/1982
36. High Plains UWCD No.1 - 9/29/1951
37. Hill Country UWCD - 8/8/1987
38. Hudspeth County UWCD No. 1 - 10/5/1957
39. Irion County WCD - 8/2/1985
40. Jeff Davis County UWCD - 11/2/1993
41. Kenedy County GCD - 11/2/2004
Confirmed Groundwater Conservation Districts (Cont.) *
42. Kimble County GCD - 5/3/2002
43. Kinney County GCD - 1/12/2002
44. Lipan-Kickapoo WCD - 11/3/1987
45. Live Oak UWCD - 11/7/1989
46. Llano Estacado UWCD - 11/3/1998
47. Lone Star GCD - 11/6/2001
48. Lone Wolf GCD - 2/2/2002
49. Lost Pines GCD - 11/5/2002
50. Lower Trinity GCD - 11/7/2006
51. McMullen GCD - 11/6/2001
52. Medina County GCD - 8/26/1991
53. Menard County UWD - 8/14/1999
54. Mesa UWCD - 1/20/1990
55. Mesquite GCD - 11/4/1986
56. Mid-East Texas GCD - 11/5/2002
57. Middle Pecos GCD - 11/5/2002
58. Middle Trinity GCD - 5/4/2002
59. Neches & Trinity Valleys GCD - 11/6/2001
60. North Plains GCD - 1/2/1955
61. North Texas GCD - 12/1/2009
62. Northern Trinity GCD - 5/15/2007
63. Panhandle GCD - 1/21/1956
64. Panola County GCD - 11/6/2007
65. Pecan Valley GCD - 11/6/2001
66. Permian Basin UWCD - 9/21/1985
67. Pineywoods GCD - 11/6/2001
68. Plateau UWC and Supply District - 3/4/1974
69. Plum Creek CD - 5/1/1993
70. Post Oak Savannah GCD - 11/5/2002
71. Prairielands GCD - 9/1/2009
72. Presidio County UWCD - 8/31/1999
73. Real-Edwards C and R District - 5/30/1959
74. Red River GCD - 9/1/2009
75. Red Sands GCD - 11/5/2002
76. Reeves County GCD - 11/3/2015
77. Refugio GCD - 11/6/2001
78. Rolling Plains GCD - 1/26/1999
79. Rusk County GCD - 6/5/2004
80. San Patricio County GCD - 5/12/2007
81. Sandy Land UWCD - 11/7/1985
82. Santa Rita UWCD - 8/19/1985
83. Saratoga UWCD - 11/7/1989
84. South Plains UWCD - 2/8/1992
85. Southeast Texas GCD - 11/2/2004
86. Southern Trinity GCD - 6/15/2009
87. Southwestern Travis County GCD - 11/5/2019
88. Starr County GCD - 1/6/2007
89. Sterling County UWCD - 11/3/1987
90. Sutton County UWCD - 4/5/1986
91. Terrell County GCD - 11/6/2012
92. Texana GCD - 11/6/2001
93. Trinity Glen Rose GCD - 11/5/2002
94. Upper Trinity GCD - 11/6/2007
95. Uvalde County UWCD - 9/1/1993
96. Victoria County GCD - 8/5/2005
97. Wes-Tex GCD - 11/5/2002
98. Wintergarden GCD - 1/17/1998
Other Districts **
Edwards Aquifer Authority
Harris-Galveston Subsidence District
Fort Bend Subsidence District
County Boundaries
Confirmed districts are arranged in alphabetical order.
Dates indicate when district was established by law or election.
* Districts that have, in whole or part, authority as assigned by Chapter 36 of the Texas Water Code. Please refer questions pertaining to individual districts to the district themselves. (www.twdb.texas.gov/groundwater/conservation_districts/index.asp)
** The subsidence districts and the Edwards Aquifer Authority are not groundwater conservation districts as defined under Chapter 36 of the Texas Water Code, but have the ability to regulate groundwater production (Senate Bill 1637 from the 78th Legislative Session and House Bill 2728 from the 86th Legislative Session).
Groundwater Conservation District GIS Data created by the Texas Commission on Environmental Quality. For more information, please contact TCEQ at 512-239-1000 or wras@tceq.texas.gov.
0 25 50 100
Miles
DISCLAIMER: This map was generated by the Texas Water Development Board using GIS (Geographical Information System) software. No claims are made to the accuracy or completeness of the information shown herein nor to its suitability for a particular use. The scale and location of all mapped data are approximate. Map date: NOV-2019
TEXAS WATER DEVELOPMENT BOARD
1700 North Congress Avenue | P.O. Box 13231
Austin, Texas 78711-3231
www.twdb.texas.gov
512-463-7847
Texas Water Development Board

Source: TWDB



Source: Hill Country Alliance

Water Governance

Federal

- Environmental Protection Agency
- International Boundary and Water Commission
- US Army Corps of Engineers
- US Fish & Wildlife Service
- US Geological Survey
- US Bureau of Reclamation
- Natural Resource Conservation Service

State

- Texas Commission on Environmental Quality
- Texas Water Development Board
- Texas Park & Wildlife Department
- Public Utility Commission
- Railroad Commission
- Texas State Soil & Water Conservation Board

Local & Regional

- River Authorities
- Groundwater Conservation Districts
- Water Utilities
- Municipal Utility Districts
- Soil & Water Conservation Districts
- Irrigation Districts
- Levee Improvement Districts
- ....

TEXAS WATER FOUNDATION

Water Planning in Texas

Statewide

- State Water Plan
  - 16 regional water planning groups
- State Flood Plan
  - 15 regional flood planning groups

Strategies in the state plans qualify for state funding.

Local

- Joint Groundwater Planning & “Desired Future Conditions”
  - 16 Groundwater Management Areas

2022
Texas State Water Plan

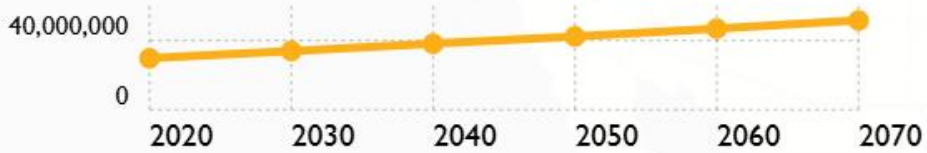
TEXAS WATER DEVELOPMENT BOARD

ABOUT

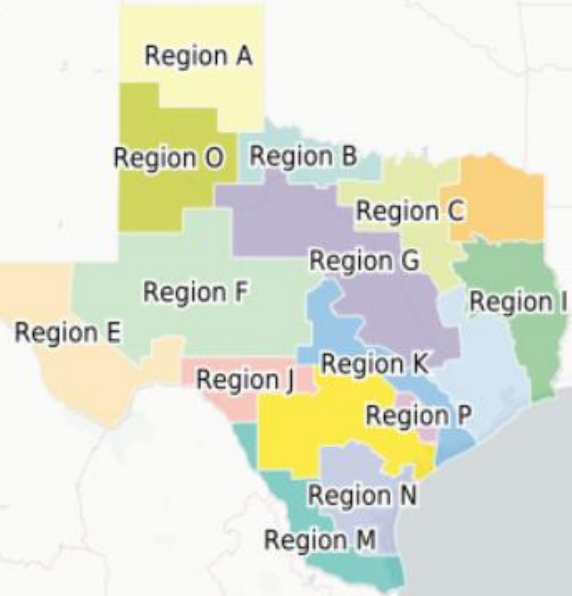
View data for All of Texas GO

TEXAS

Population



SHOW DATA TABLE



This website lets water users statewide take an up-close look at the 2022 State Water Plan data and how water needs change over time by showing:

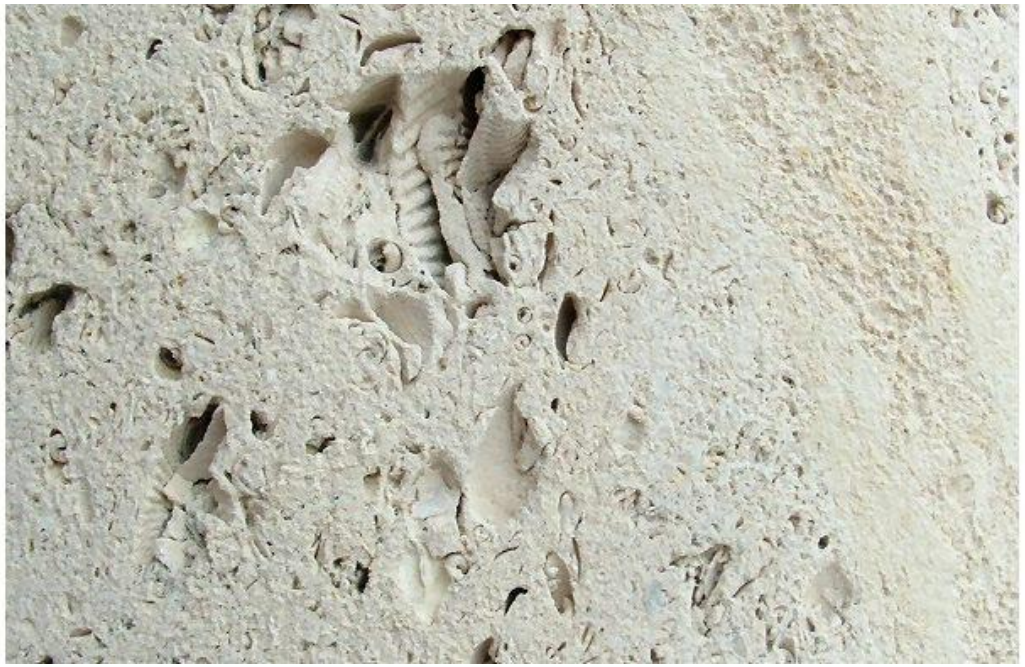
- projected water demands,
- existing water supplies,
- the relative severity and projected water needs (potential shortages),
- the water management strategies recommended to address potential shortages, and
- recommended capital projects and their sponsors.

What we'll cover

- Basics of Texas Water Law
- **Background: Hill Country Hydrology**
- Current Challenges Hill Country Water Resources
- Solutions?

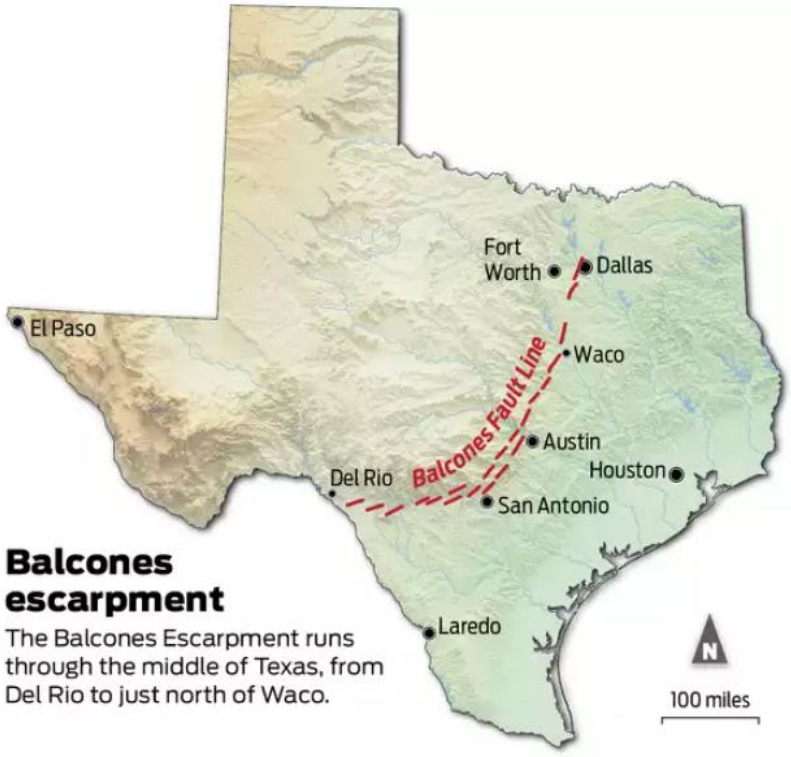
~145-66 million years ago

Source: USGS, Core Research Center



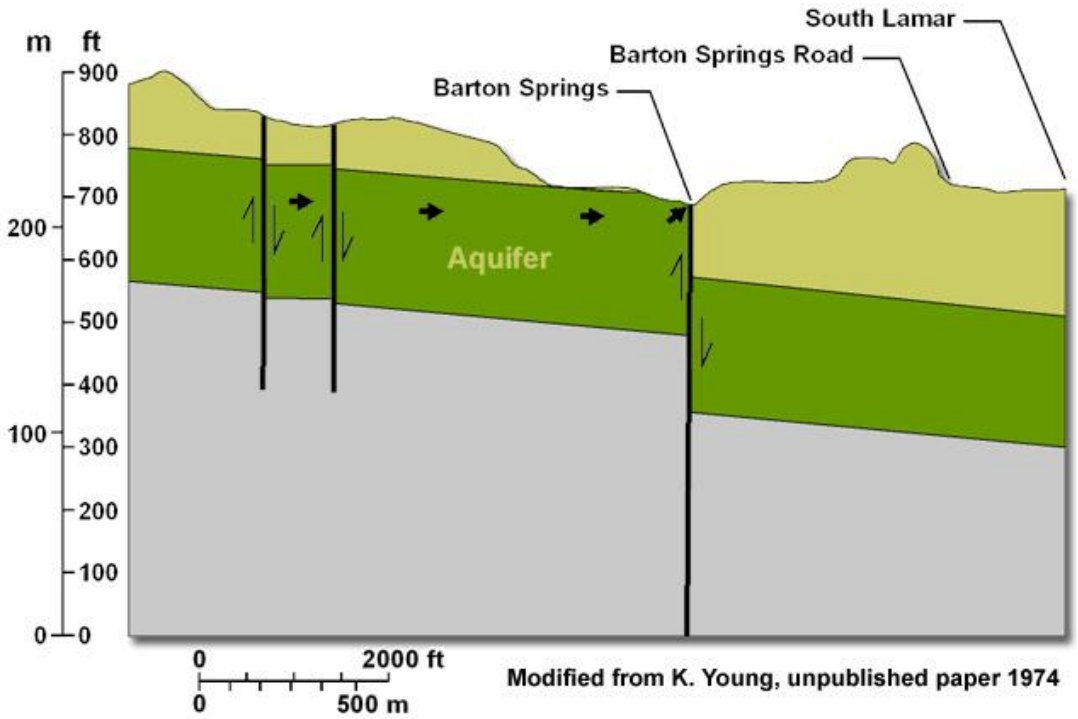
Source: Wikipedia commons

Major faulting took place ~20-25 million years ago

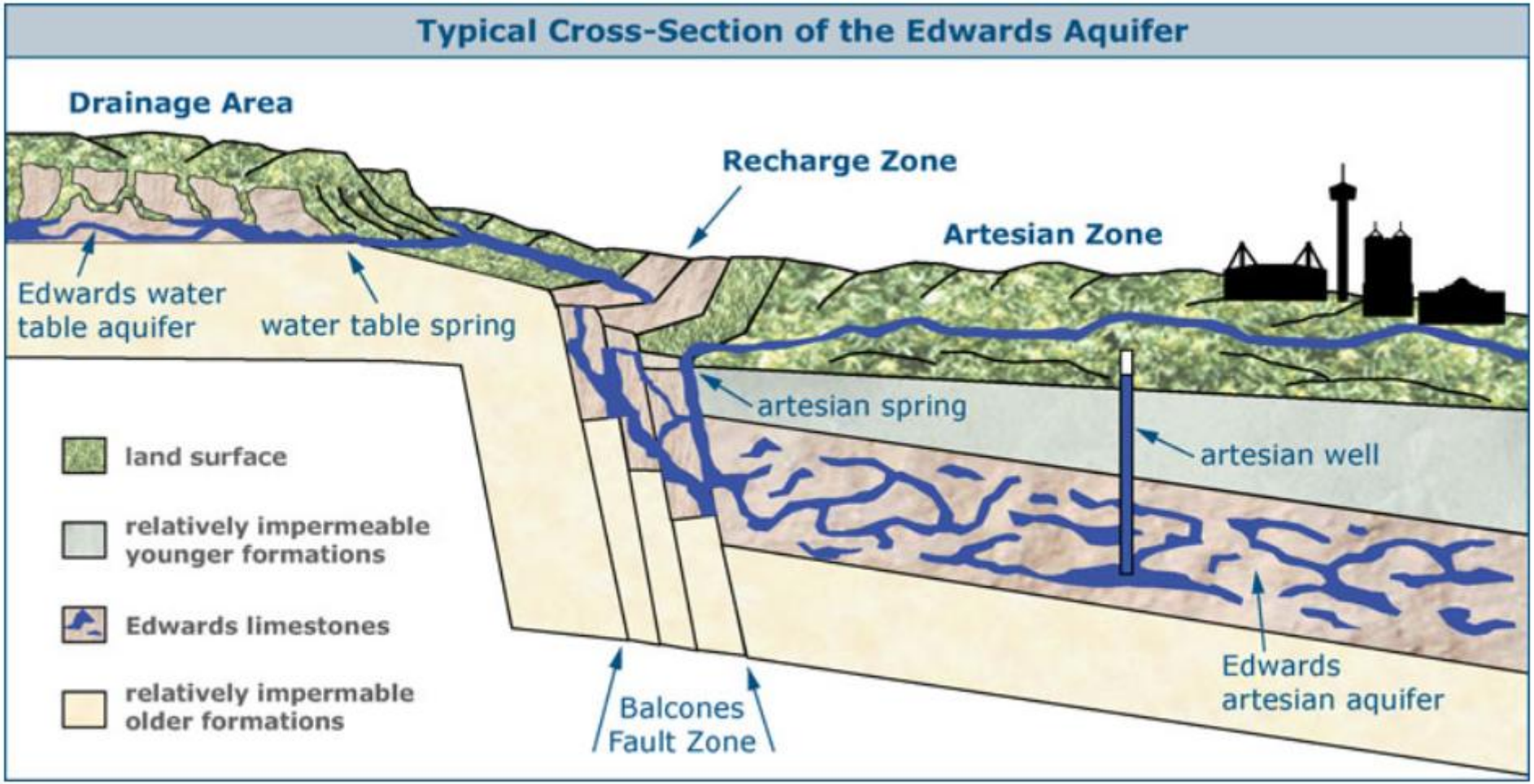


The Balcones Escarpment runs through Central Texas.
San Antonio Express-News

Source: San Antonio Express News

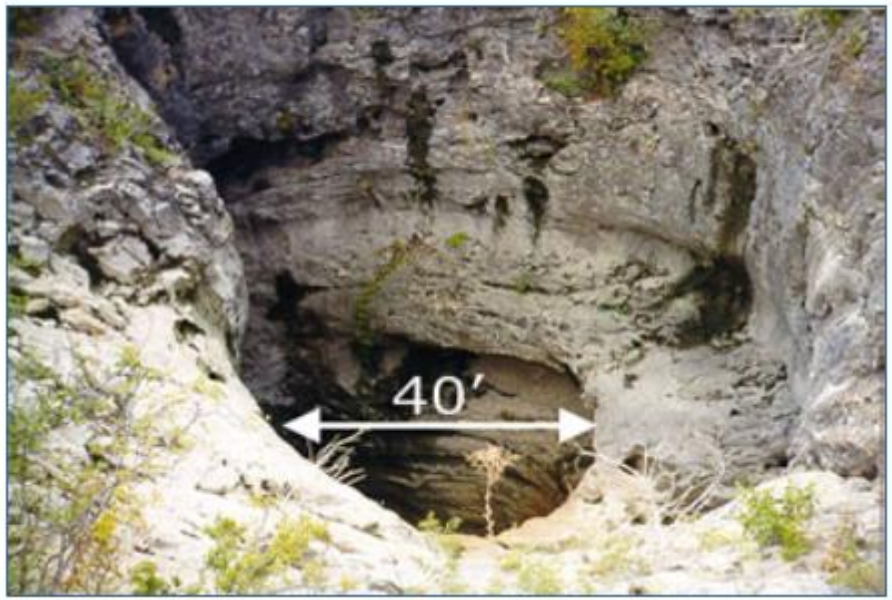


Source: BEG and K.Young



Source: Greg Eckhardt, EdwardsAquifer.net

The Valdina Farms / Seco Creek Recharge Project



Source: Greg Eckhardt, EdwardsAquifer.net

Photo Credit: Scott Bauer


Texas Hill Country
hillcountryalliance.org
MCCULLOCH
SAN SABA
Brazos
Lampasas
BELL
Buchanan & LBJ Lakes
SCHLEICHER
MENARD
Mason
Llano
Burnet
San Gabriel
MASON
LLANO
BURNET
WILLIAMSON
Llano R.
North Llano
Llano
Marble Falls
Sandy Creek
SUTTON
Junction
KIMBLE
Colorado
Austin & Travis Lakes
Pflugerville
Manor
BLANCO
GILLESPIE
Johnson City
TRAVIS
Austin
Upper Devils
Fredericksburg
Pedernales R.
Pedernales
Dripping Springs
Colorado R.
Lower Colorado Cummins
Rio Grande
South Llano
Trinity Aquifer Recharge Zone
Blanco R.
Blanco
HAYS
Buda
Rocksprings
Kerrville
San Marcos
Kyle
BASTROP
Dry Devils
EDWARDS
KERR
Upper Guadalupe
KENDALL
Guadalupe
Wimberley
Nueces Headwaters
Guadalupe R.
San Marcos
West Nueces
REAL
Edwards Aquifer Contributing Zone
COMAL
Middle Guadalupe
CALDWELL
Boerne
Leakey
Bandera
Cibolo
Cibolo Creek
New Braunfels
Elm-Sycamore
Camp Wood
BANDERA
Frio R.
Sabinal R.
San Antonio
VAL VERDE
Nueces R.
Hondo Creek
Medina R.
Medina
BEXAR
KINNEY
Edwards Aquifer Recharge Zone
San Antonio
Summer 2012
0
20 miles
Sources: HCA, TNRIS, ESRI, TCEQ
Produced for HCA by Siglo Group
Edwards Aquifer Recharge Zone
Edwards Aquifer Contributing Zone
Trinity Aquifer Recharge Zone
Carrizo Aquifer Recharge Zone
River Basin Boundary
Water Catchment Boundary
* The recharge zone of the Trinity and the contributing zone of the Edwards Aquifers have substantial overlap.
West Nueces
UVALDE
Nueces
Sabinal
Hondo
Upper Frio
MEDINA
Hondo
San Miguel
Upper San Antonio
Uvalde
Seco Creek
Turkey
Upper Nueces
Carrizo Aquifer Recharge Zone
Devine
Atascosa
WILSON
ATASCOSA
ZAVALA
FRIO
TEXAS
El Paso
Ft. Worth
Dallas
Houston
Austin
The Hill Country

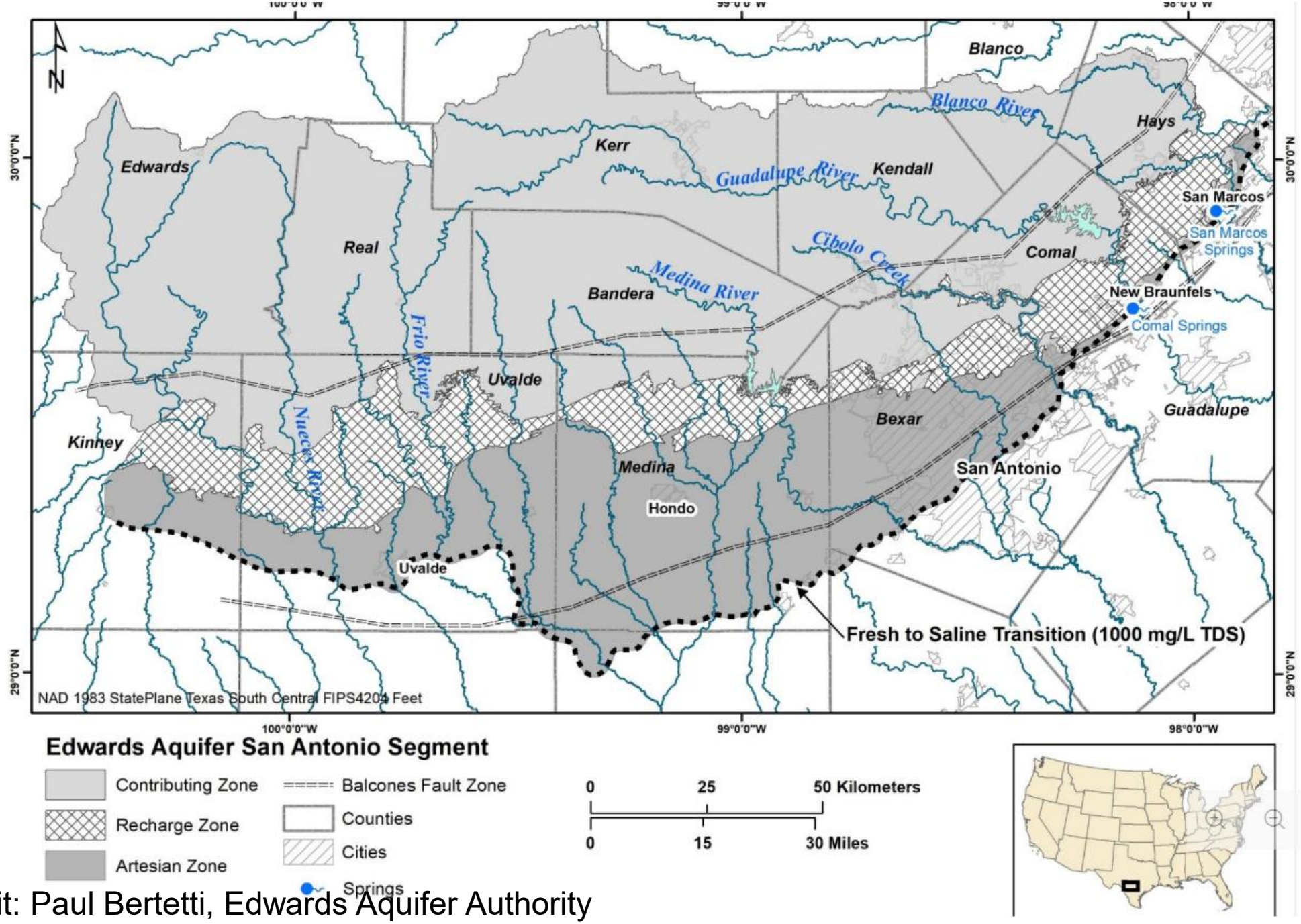


Photo Credit: Paul Bertetti, Edwards Aquifer Authority

KARST!

Source: TESPA

Source: Bamberger Ranch

What we'll cover

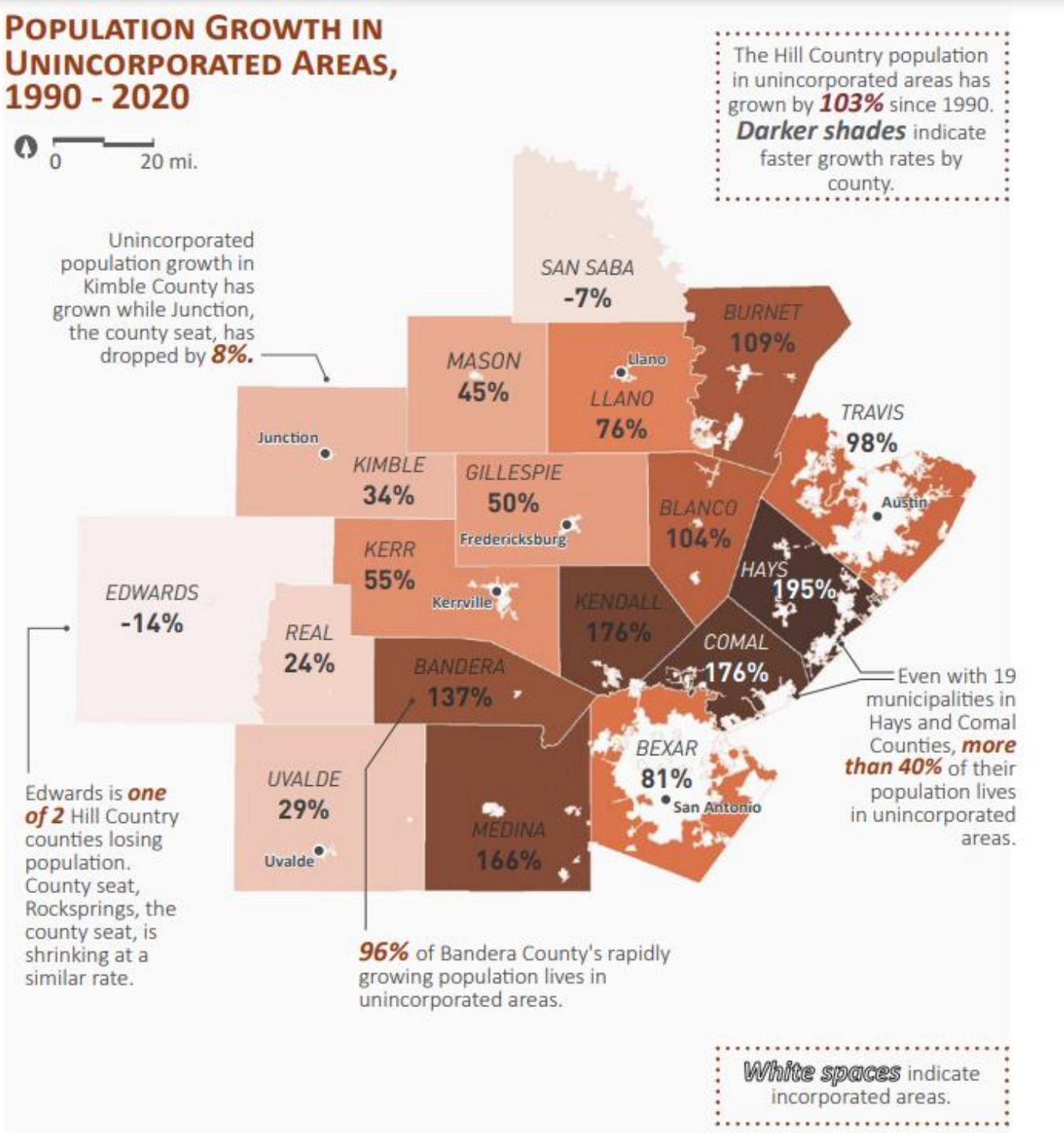
- Basics of Texas Water Law
- Background: Hill Country Hydrology
- **Current Challenges for Hill Country Water Resources**
- Solutions?

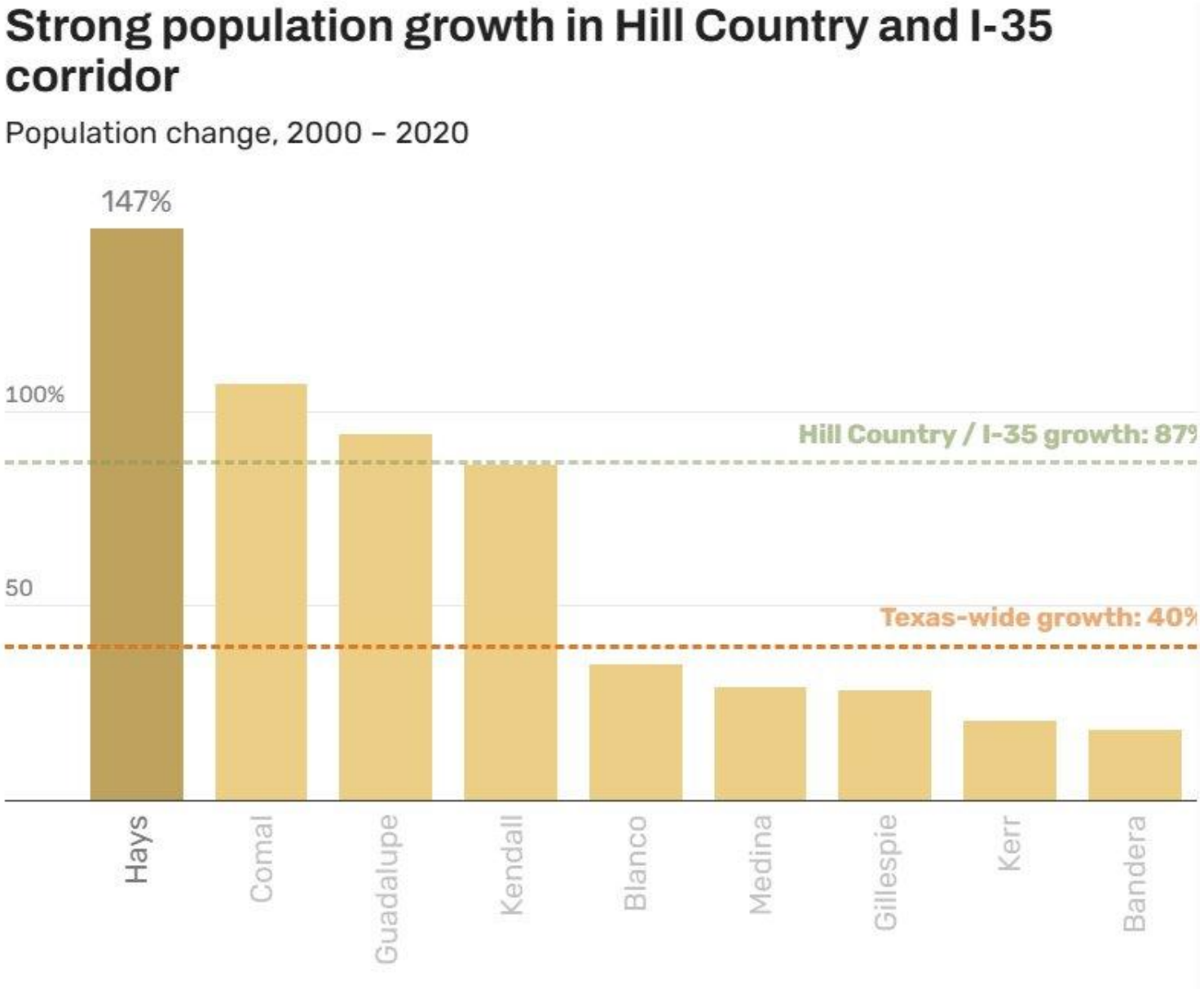
Challenge #1: Growth

Since 1990, the population of the unincorporated Hill Country has more than doubled.

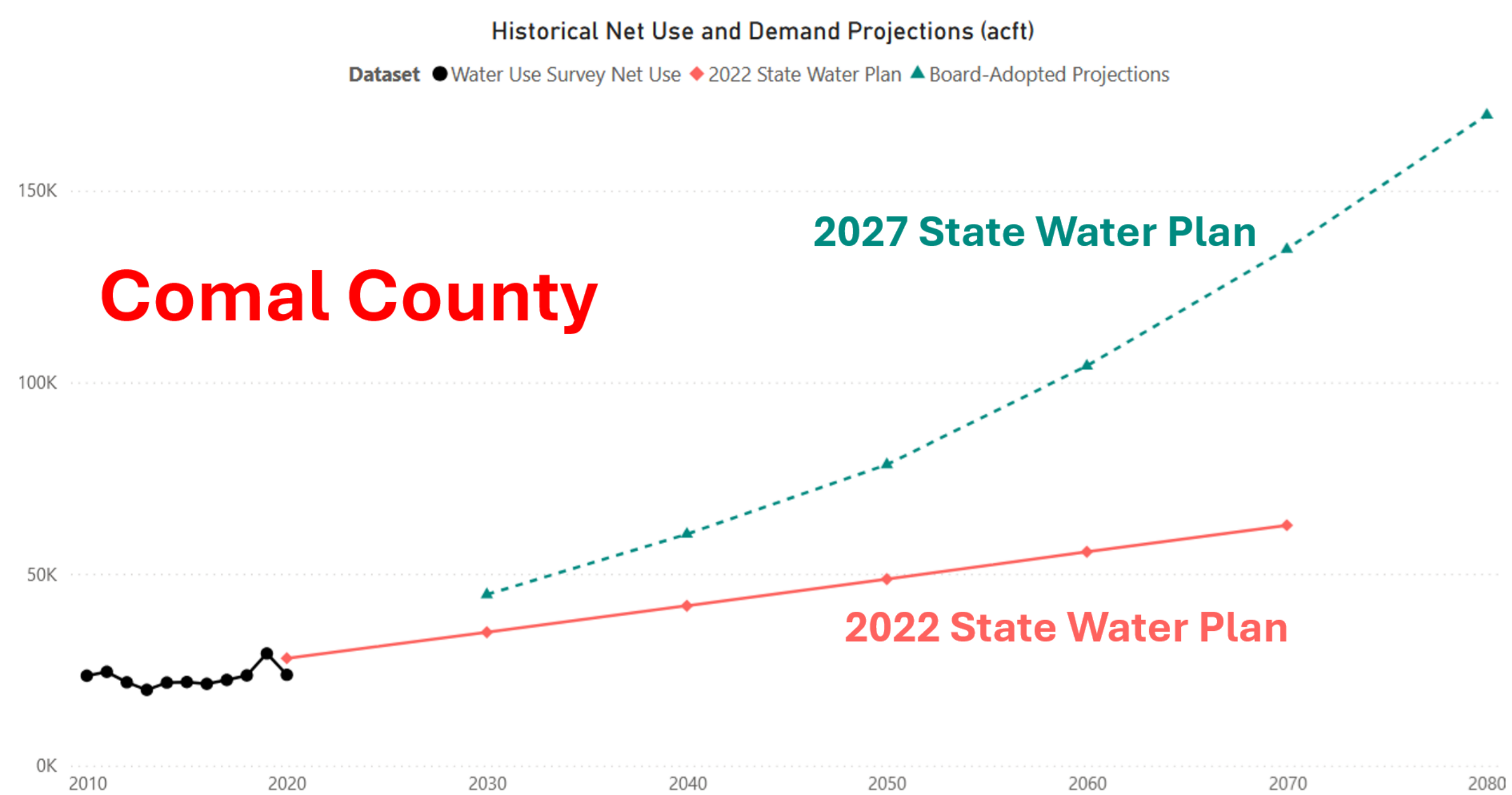
State of the Hill Country Report

Published: Spring 2022



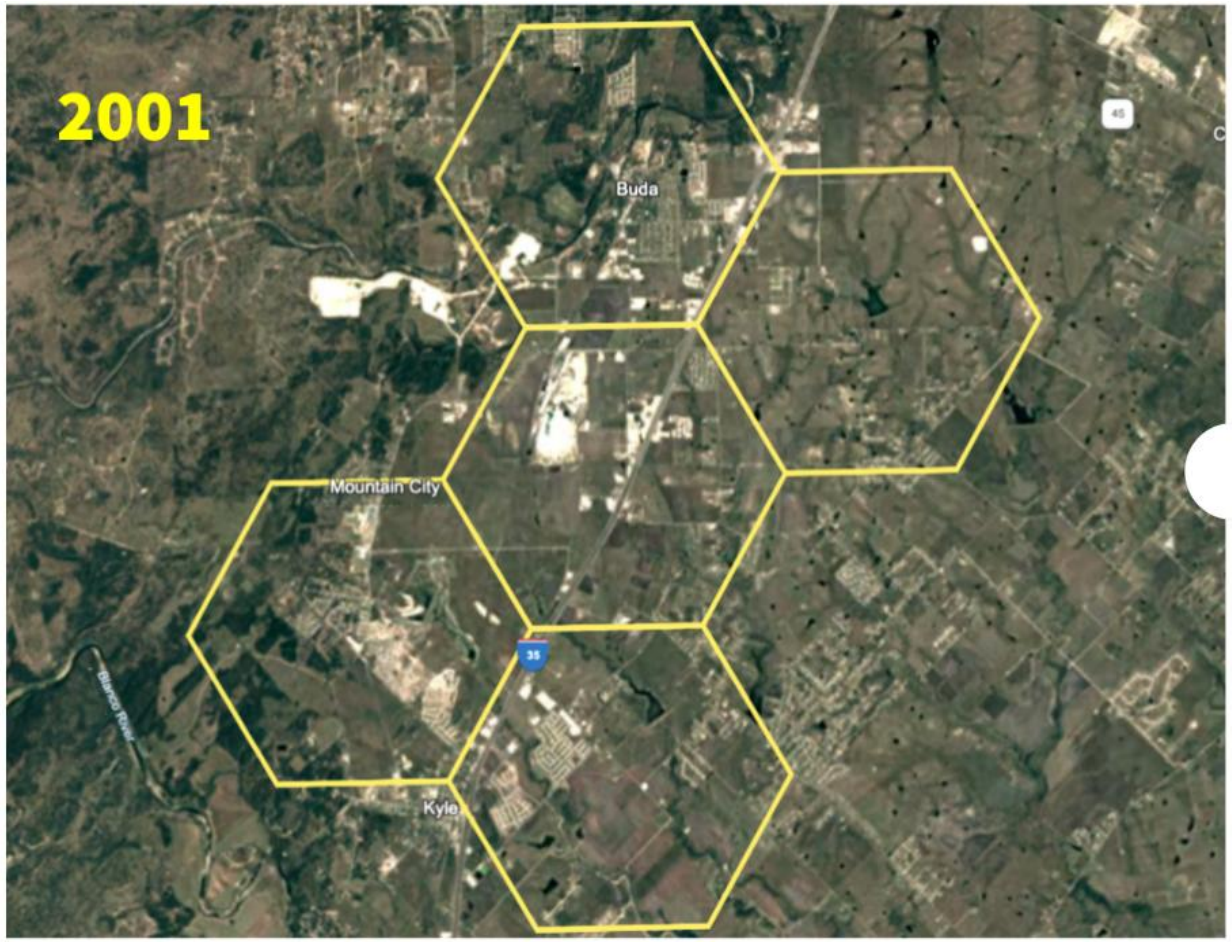


Source: San Antonio Express News, Satellite data shows quickest developing areas in the Texas Hill Country, I-35 corridor, May 2024

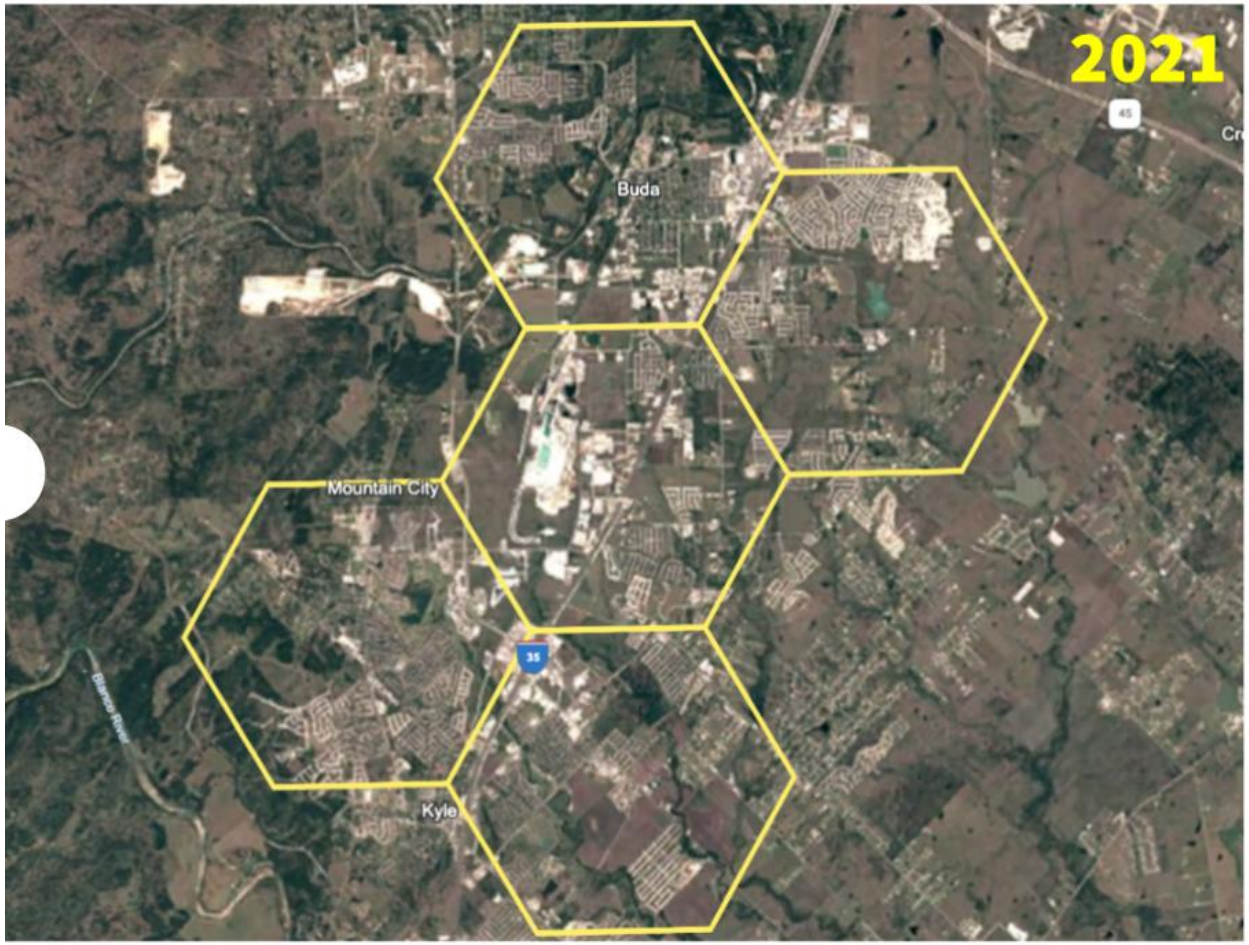


2026 Regional Water Plan Board-Adopted Population and Municipal Demand Projections

Buda and Kyle



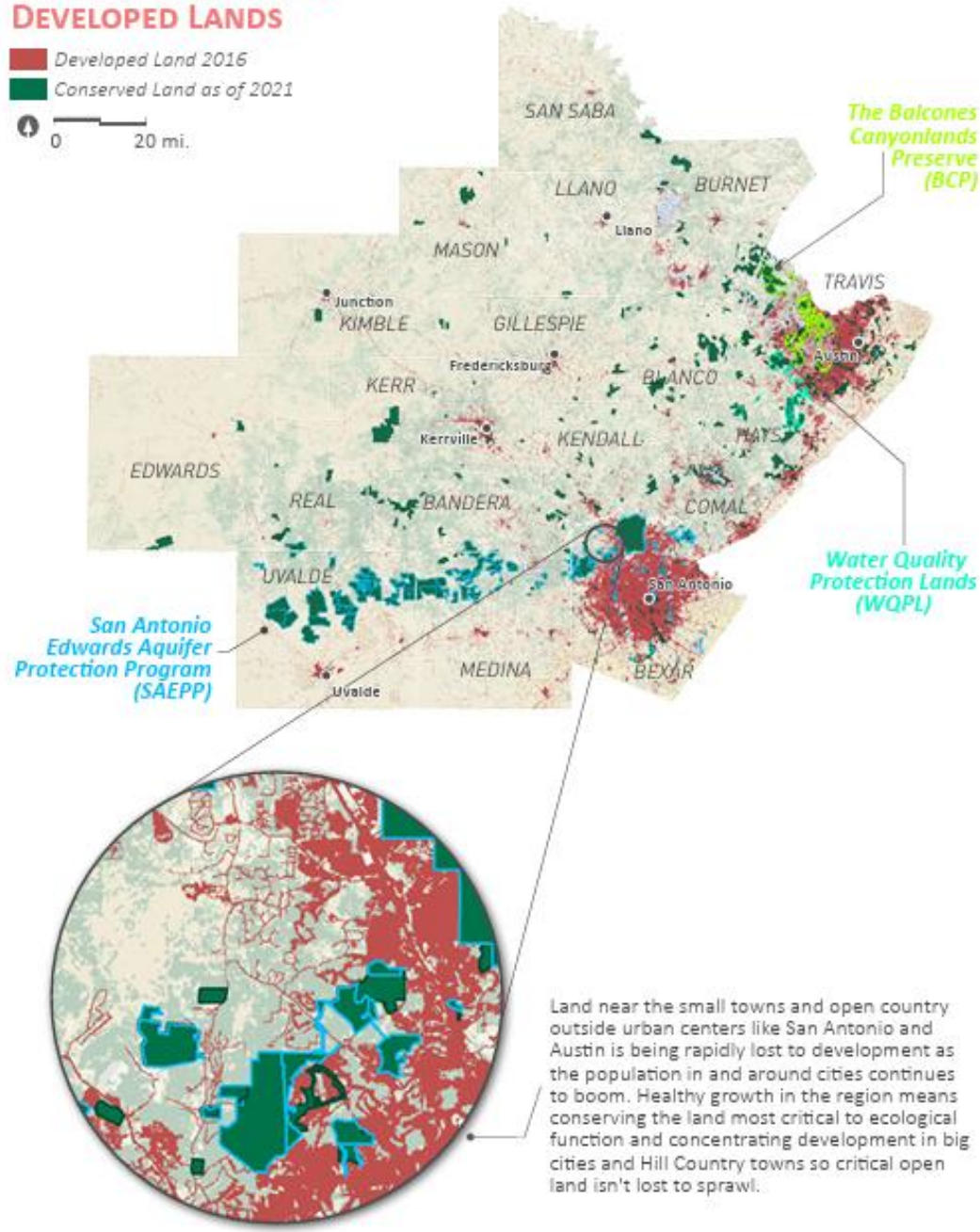
Source: Landsat7, Landsat8



Source: Landsat7. Landsat8

Source: San Antonio Express News, Satellite data shows quickest developing areas in the Texas Hill Country, I-35 corridor, May 2024

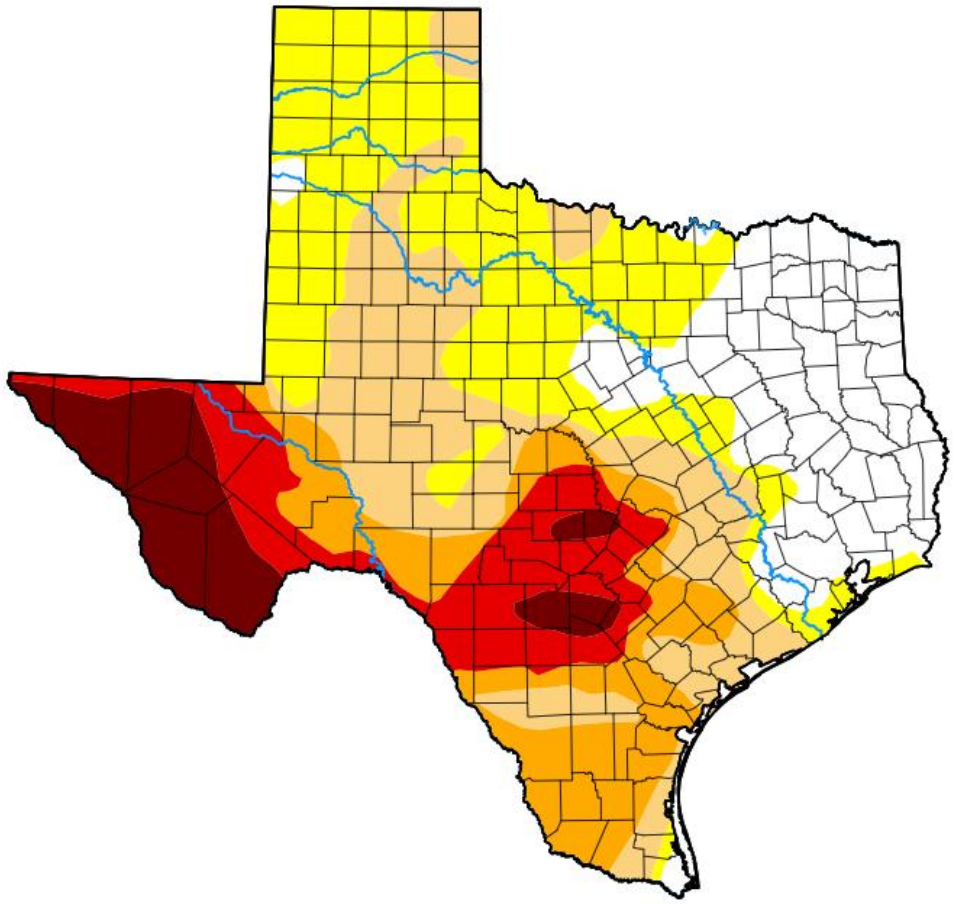
Conserved Lands vs. Developed Lands



Land near the small towns and open country outside urban centers like San Antonio and Austin is being rapidly lost to development as the population in and around cities continues to boom. Healthy growth in the region means conserving the land most critical to ecological function and concentrating development in big cities and Hill Country towns so critical open land isn't lost to sprawl.

Challenge #2: Drought

Drought



Map released: Thurs. March 13, 2025

Data valid: March 11, 2025 at 8 a.m. EDT

Intensity

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

Authors

United States and Puerto Rico Author(s):

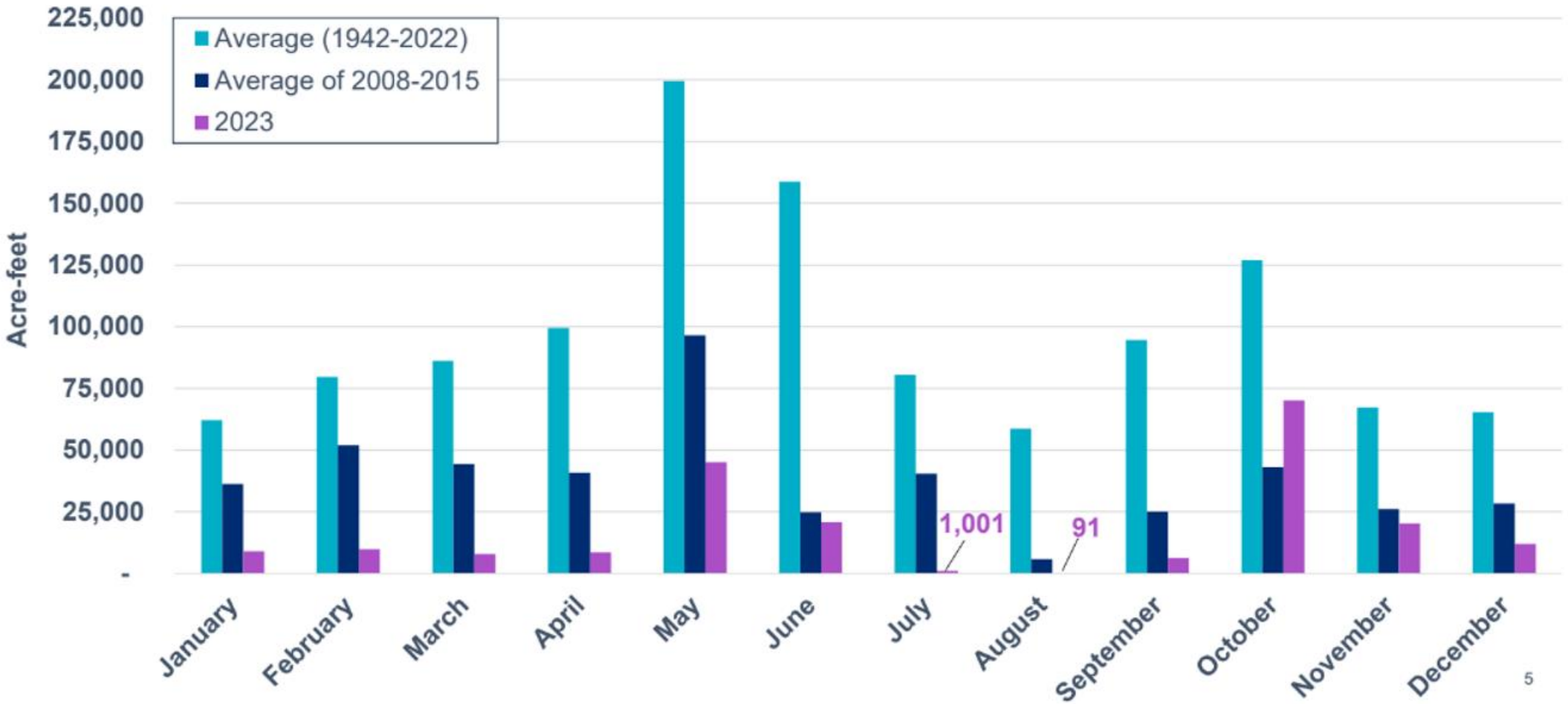
Richard Tinker, NOAA/NWS/NCEP/CPC

Pacific Islands and Virgin Islands Author(s):

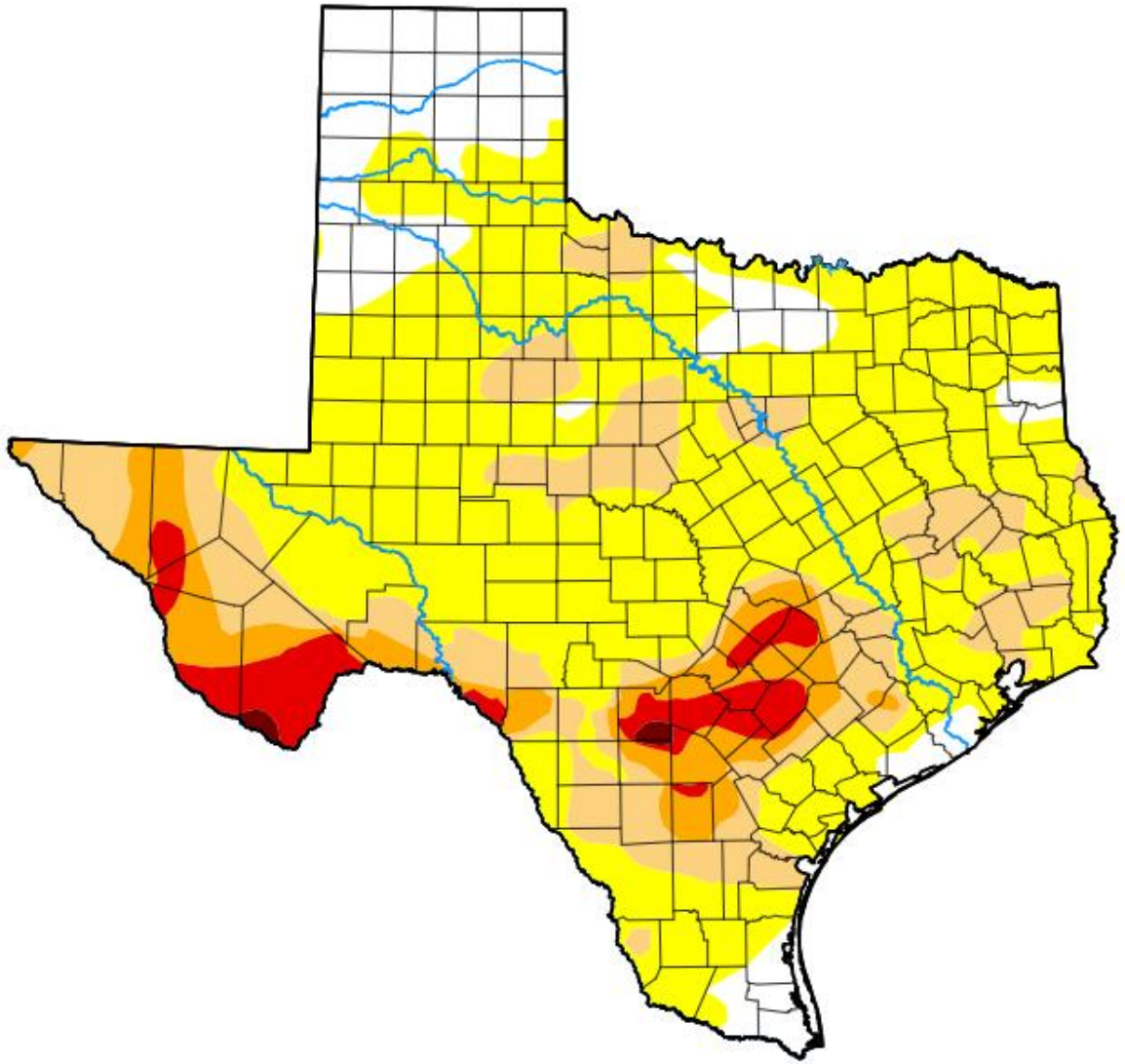
Brad Rippey, U.S. Department of Agriculture

Source: U.S. Drought Monitor

Water Flowing Into Lakes Buchanan and Travis



Source: LCRA



Map released: Thurs. October 16, 2025

Data valid: October 14, 2025 at 8 a.m. EDT

Intensity

- None
- D0 (Abnormally Dry)
- D1 (Moderate Drought)
- D2 (Severe Drought)
- D3 (Extreme Drought)
- D4 (Exceptional Drought)
- No Data

Authors

United States and Puerto Rico Author(s):

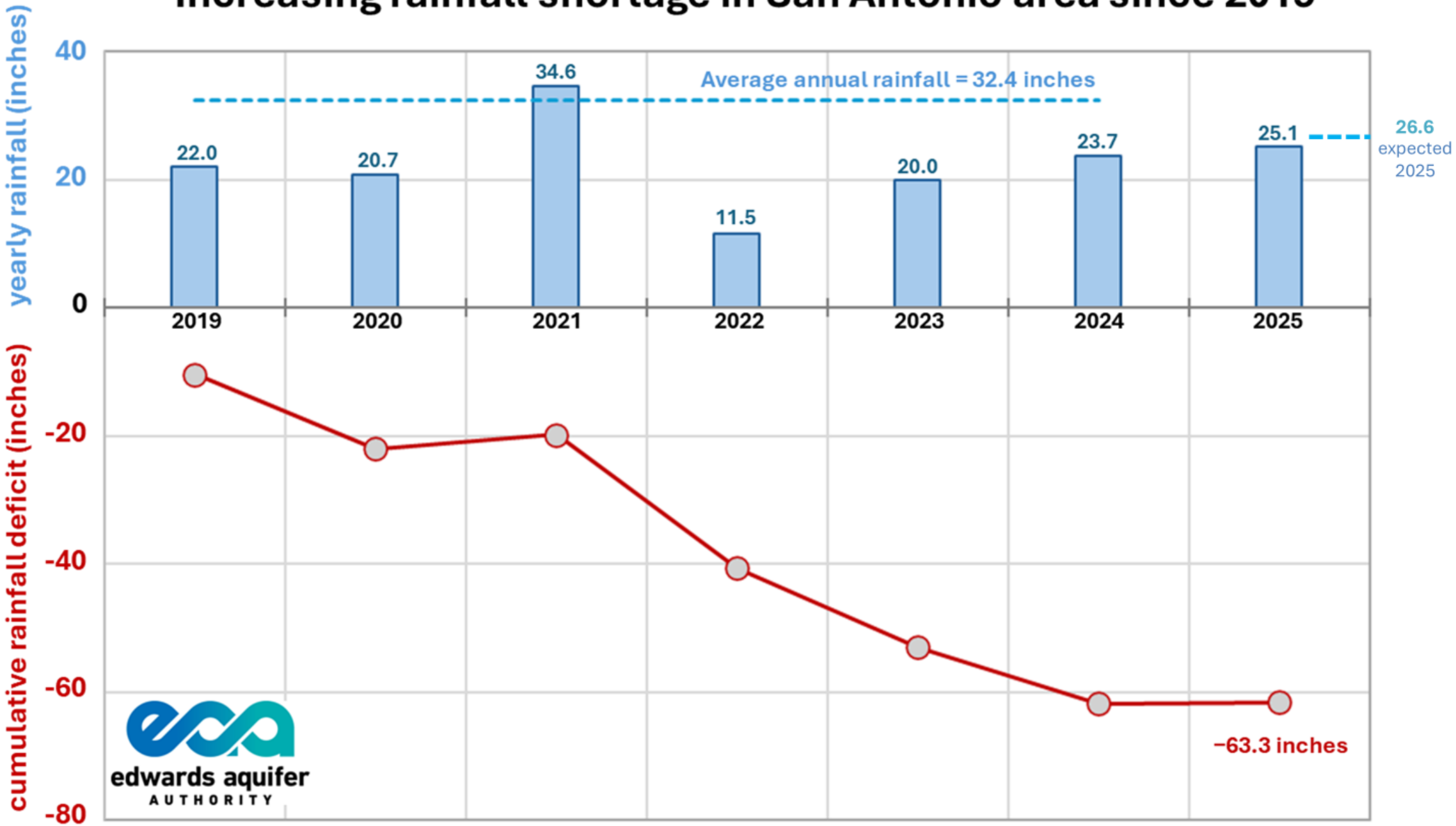
Richard Tinker, NOAA/NWS/NCEP/CPC

Pacific Islands and Virgin Islands Author(s):

Tsegaye Tadesse, National Drought Mitigation Center

Source: U.S. Drought Monitor

Increasing rainfall shortage in San Antonio area since 2019



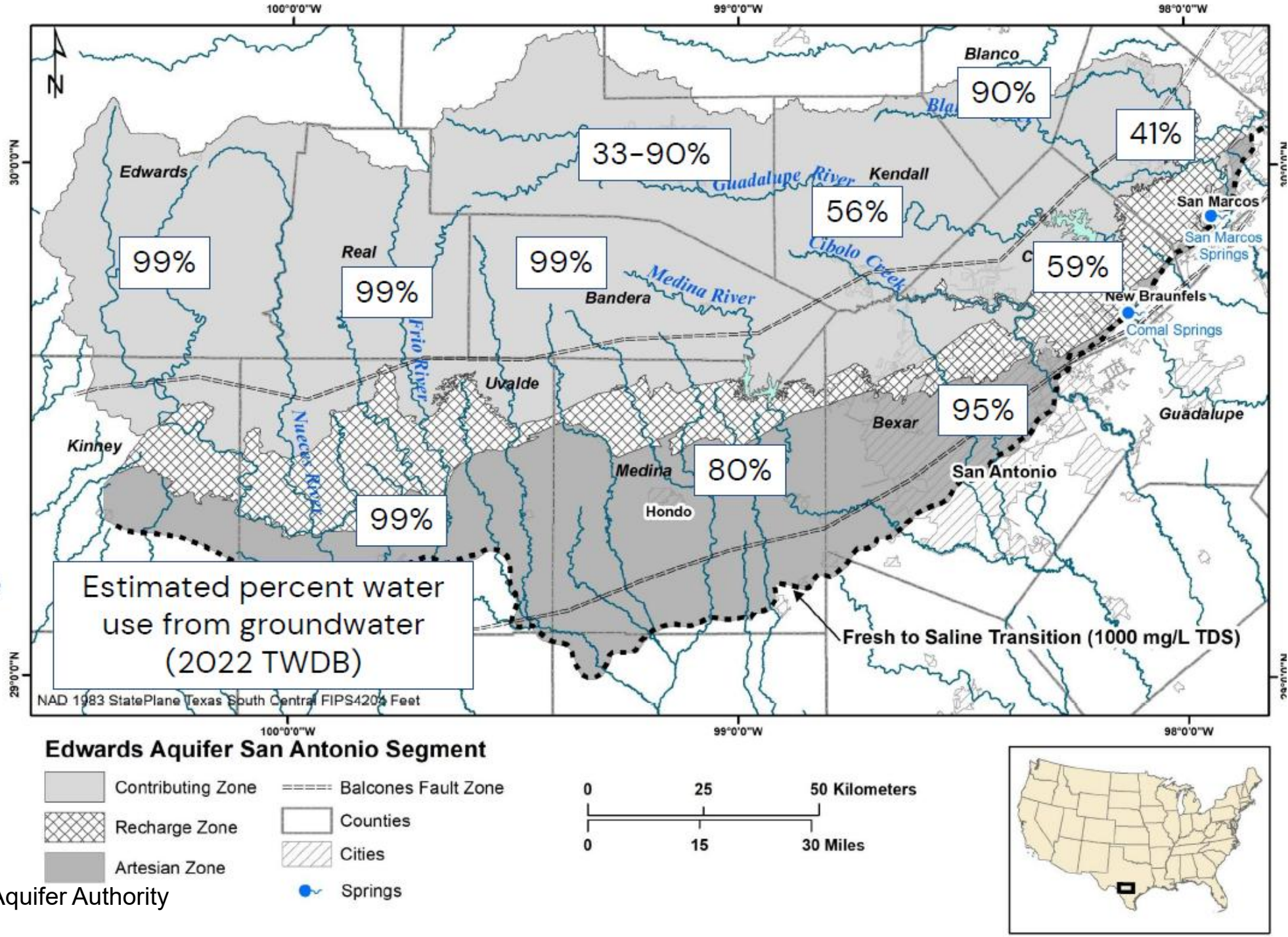
Source: Paul Bertetti, Edwards Aquifer Authority, Oct 17

Index Well (J-17) for San Antonio pool of the Edwards Aquifer

Source: Edwards Aquifer Authority

Aquifers are extremely important water supplies for the region

- Both the Trinity and Edwards aquifers are heavily used
- Surface water sources also rely on groundwater for much of baseflow
- Many alternative supplies also include groundwater sources (e.g., Carrizo-Wilcox)

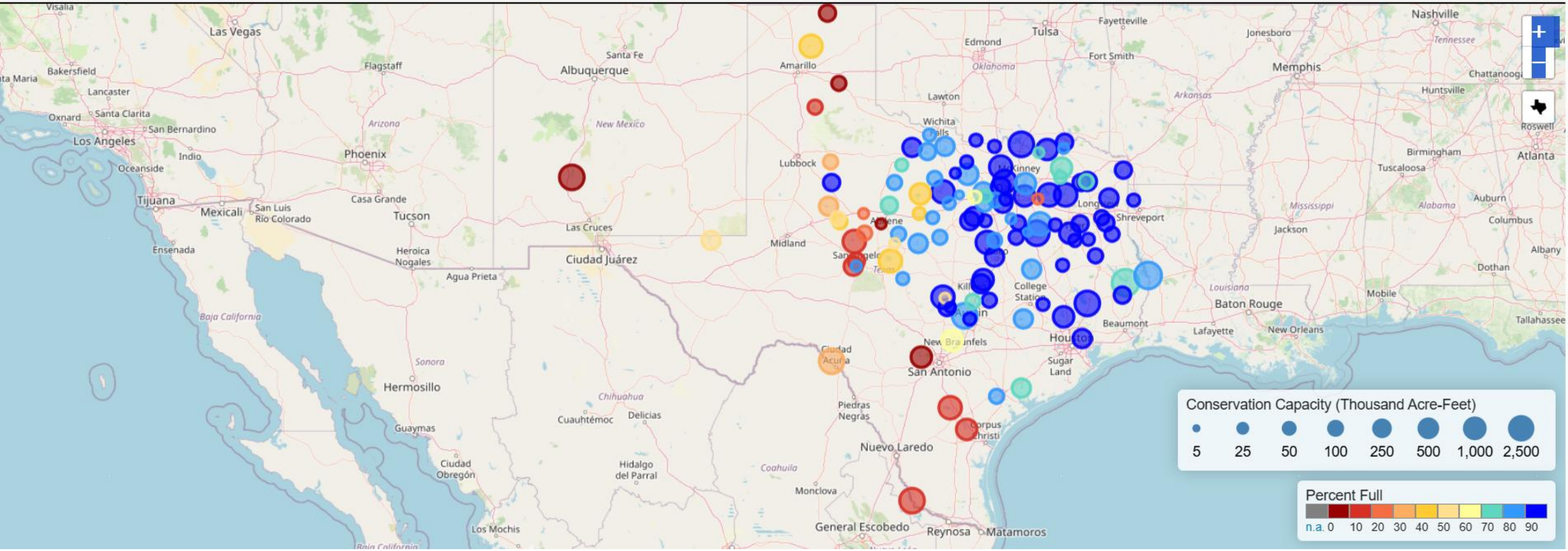


Source: Paul Bertetti, Edwards Aquifer Authority

Water Data for Texas | Reservoirs | Drought | Groundwater | Coastal | Lake Evaporation/Rainfall | TexMesonet | About | TEXAS WATER DEVELOPMENT BOARD

Statewide | By Planning Area | By River Basin | By Municipal Area | By Climate Region | ☆ Flooding | About

Texas Reservoirs: Monitored Water Supply Reservoirs are 73.9% full on 2025-10-22



Challenge #3: Flash Floods

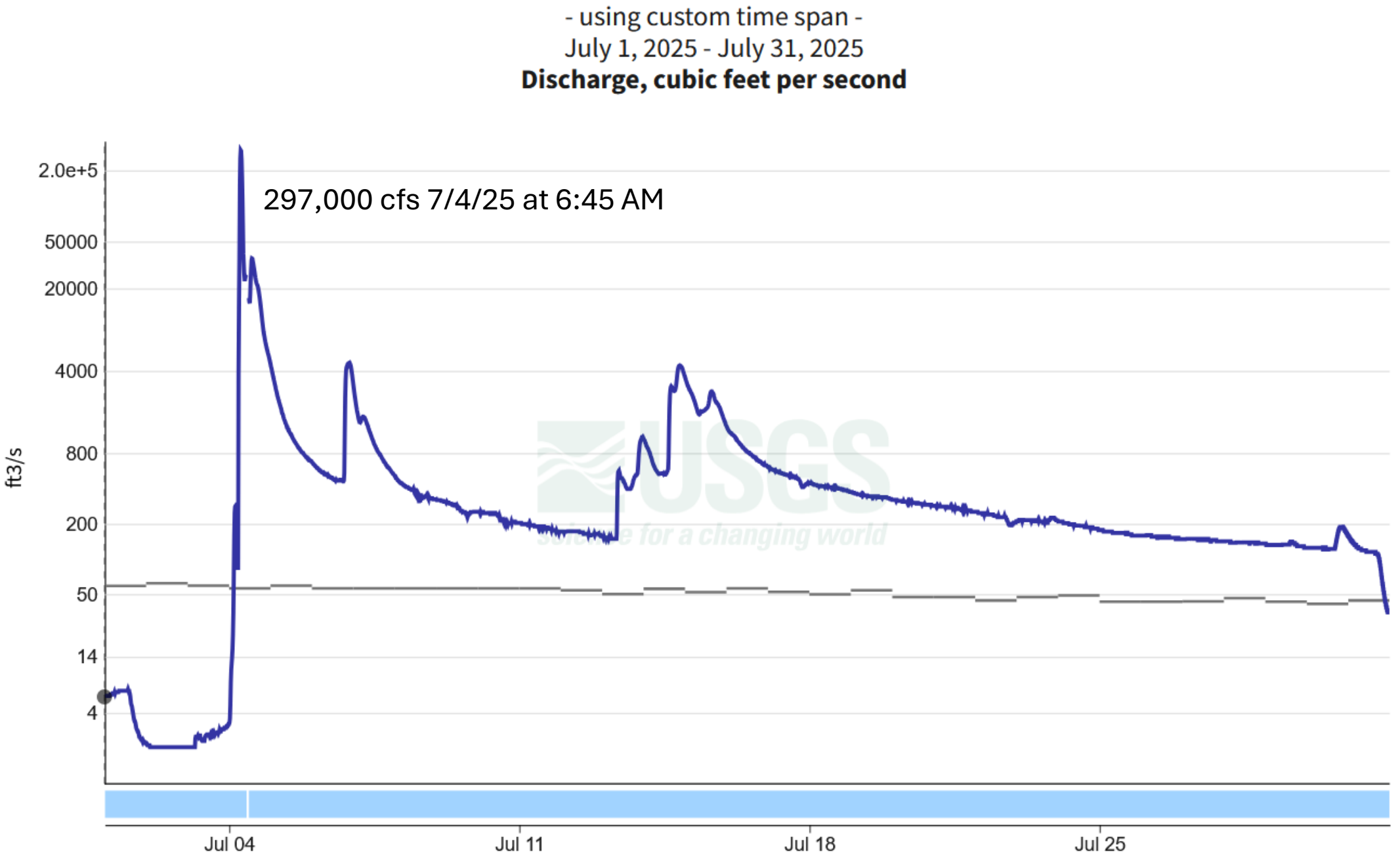
Source: Bamberger Ranch

Credit:
UGRA

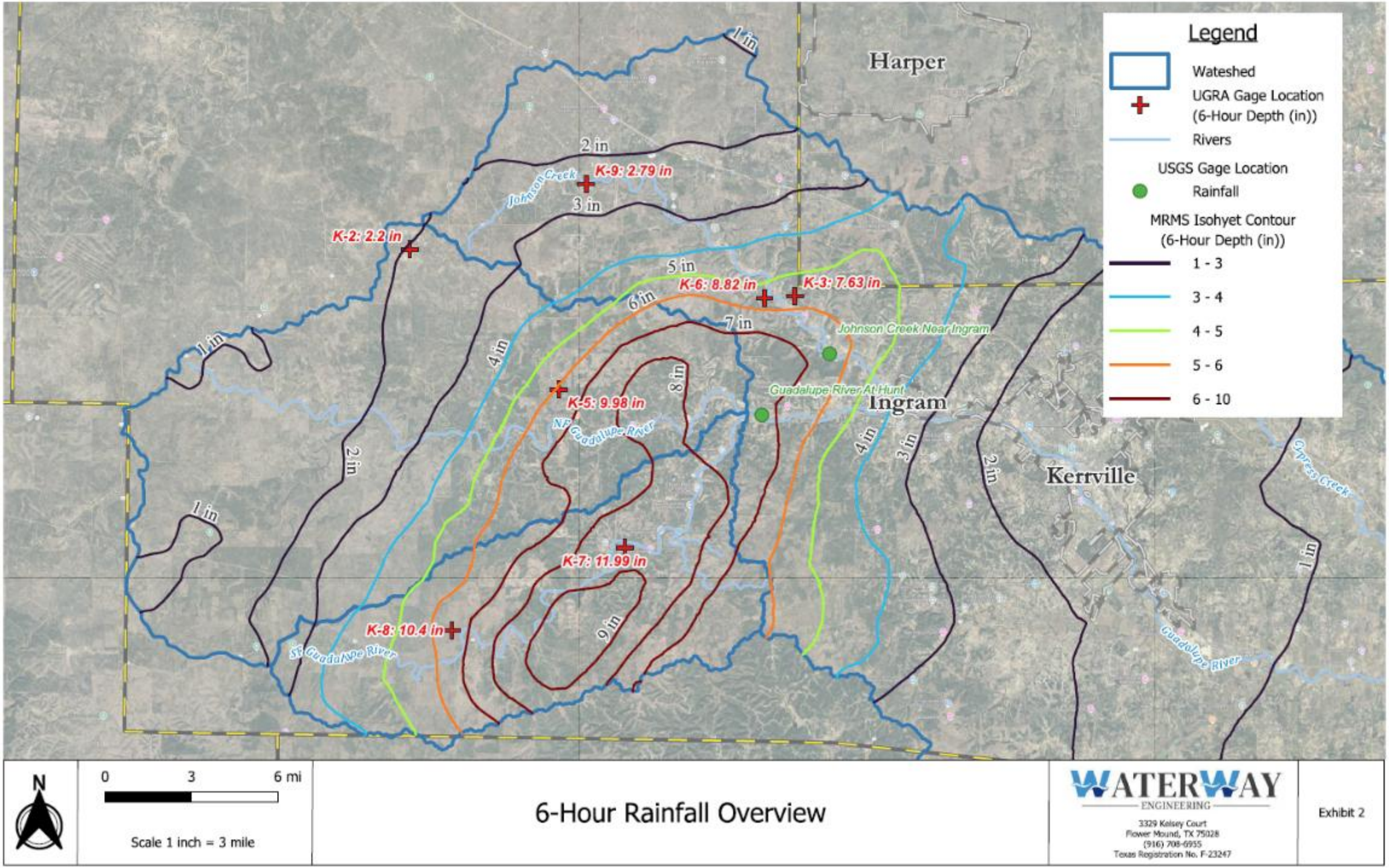
Credit:
UGRA

Credit:
UGRA

Guadalupe Rv at Kerrville, TX - USGS-08166200 Subscribe to WaterAlert



Credit:
UGRA


Legend
Wateshed
UGRA Gage Location
(6-Hour Depth (in))
Rivers
USGS Gage Location
Rainfall
MRMS Isohyet Contour
(6-Hour Depth (in))
1 - 3
3 - 4
4 - 5
5 - 6
6 - 10
Harper
Ingram
Kerrville
K-2: 2.2 in
K-9: 2.79 in
K-3: 7.63 in
K-6: 8.82 in
K-5: 9.98 in
K-7: 11.99 in
K-8: 10.4 in
Johnson Creek Near Ingram
Guadalupe River At Hunt
NF Guadalupe River
SF Guadalupe River
Guadalupe River
Cypress Creek
1 in
2 in
3 in
4 in
5 in
6 in
7 in
8 in
9 in
N
0
3
6 mi
Scale 1 inch = 3 mile
6-Hour Rainfall Overview
WATERWAY ENGINEERING
3329 Kelsey Court
Flower Mound, TX 75028
(916) 708-6955
Texas Registration No. F-23247
Exhibit 2

Credit:
UGRA

Historic Floods

- **Hunt**

1. 37.51 feet on 7/4/2025*
2. 36.60 feet on 7/2/1932
3. 28.40 feet on 7/17/1987
4. 23.50 feet on 8/2/1978
5. 22.80 feet on 10/19/1985

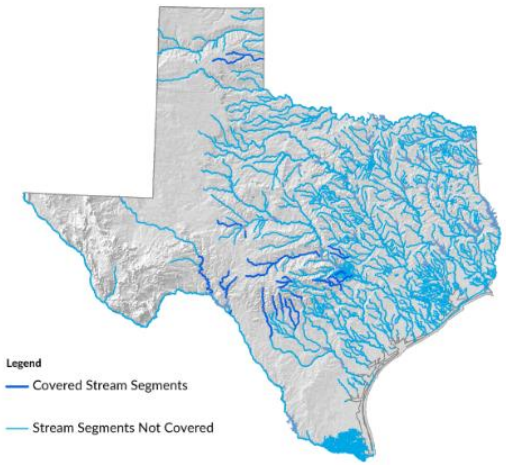
- **Kerrville**

1. 39.00 feet on 7/2/1932
2. 37.72 feet on 7/17/1987
3. 34.29 feet on 7/4/2025*
4. 17.93 feet on 11/23/2000
5. 17.73 feet on 10/28/1996

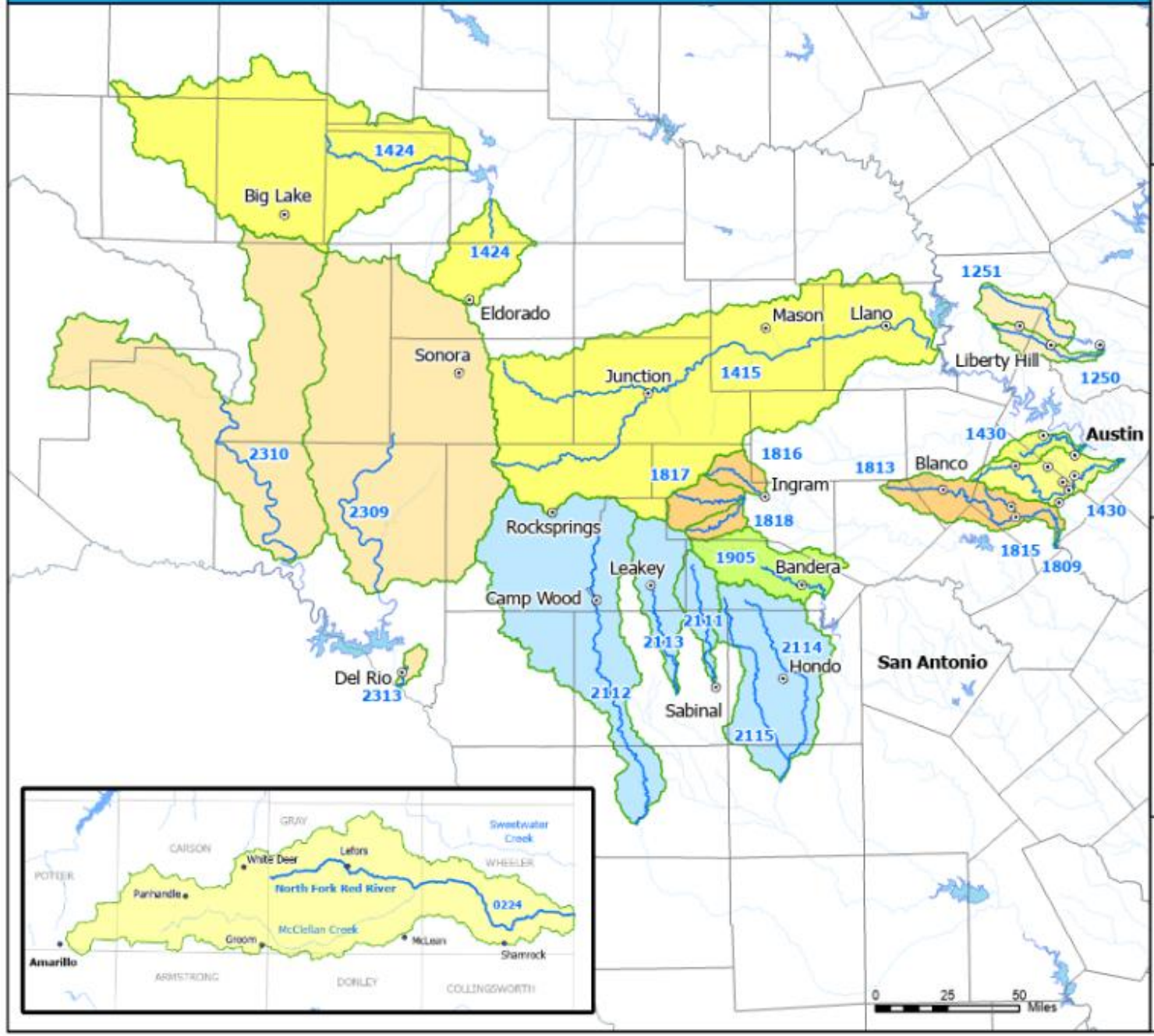
Challenge #4: Wastewater

Frio River
Photo Credit: Jordan Moore

Figure 1. Pristine Stream Watersheds



Source: TCEQ Surface Water Quality Monitoring Data, Selected Segments (Exhibit B).
Map by Robin Gary, WVWA, 2/10/2022



Protecting Texas by Reducing and Preventing Pollution

Texas Commission on Environmental Quality
Water Quality Assessment
Mail Code 150
Austin, Texas 78711-3087

- Town
- Stream Segment
- North Fork Red River Watershed
- Forks of San Gabriel River Watershed
- Llano River Watershed
- Concho River Tributaires Watershed
- Onion Creek Watershed
- Barton Creek Watershed
- Blanco River Watershed
- Upper Guadalupe River Watershed
- Medina River Watershed
- Upper Nueces River Watershed
- Frio River Tributaries Watershed
- Rio Grande Tributaries Watershed

Map Created on: 6/27/2022

This map was generated by the Water Quality Assessment Team of the Texas Commission on Environmental Quality. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. For more information concerning this map, contact the Water Quality Division at (512) 239-4671.

Algae bloom in South San Gabriel River downstream of the Liberty Hill wastewater plant (Courtesy Save Barton Creek Association)

Source: KXAN

San Antonio Express-News

e-Edition

'Not in my water faucet:' Residents step up fight against proposed Guajolote Ranch wastewater plant

Elena Bruess, San Antonio Express-News

April 19, 2023 | Updated: April 19, 2023 7:34 p.m.

Gift this article

San Antonio Express-News

e-Edition Account

NEWS // TEXAS HILL COUNTRY

Critics set to push back against Comal County project that calls for 1,400 homes, wastewater plant

The Texas Commission on Environmental Quality is holding a public hearing Thursday to get community feedback on the proposal.

Ricardo Delgado, Barry L. Harrell, San Antonio Express-News

June 6, 2023 | Updated: June 6, 2023 5:41 p.m.

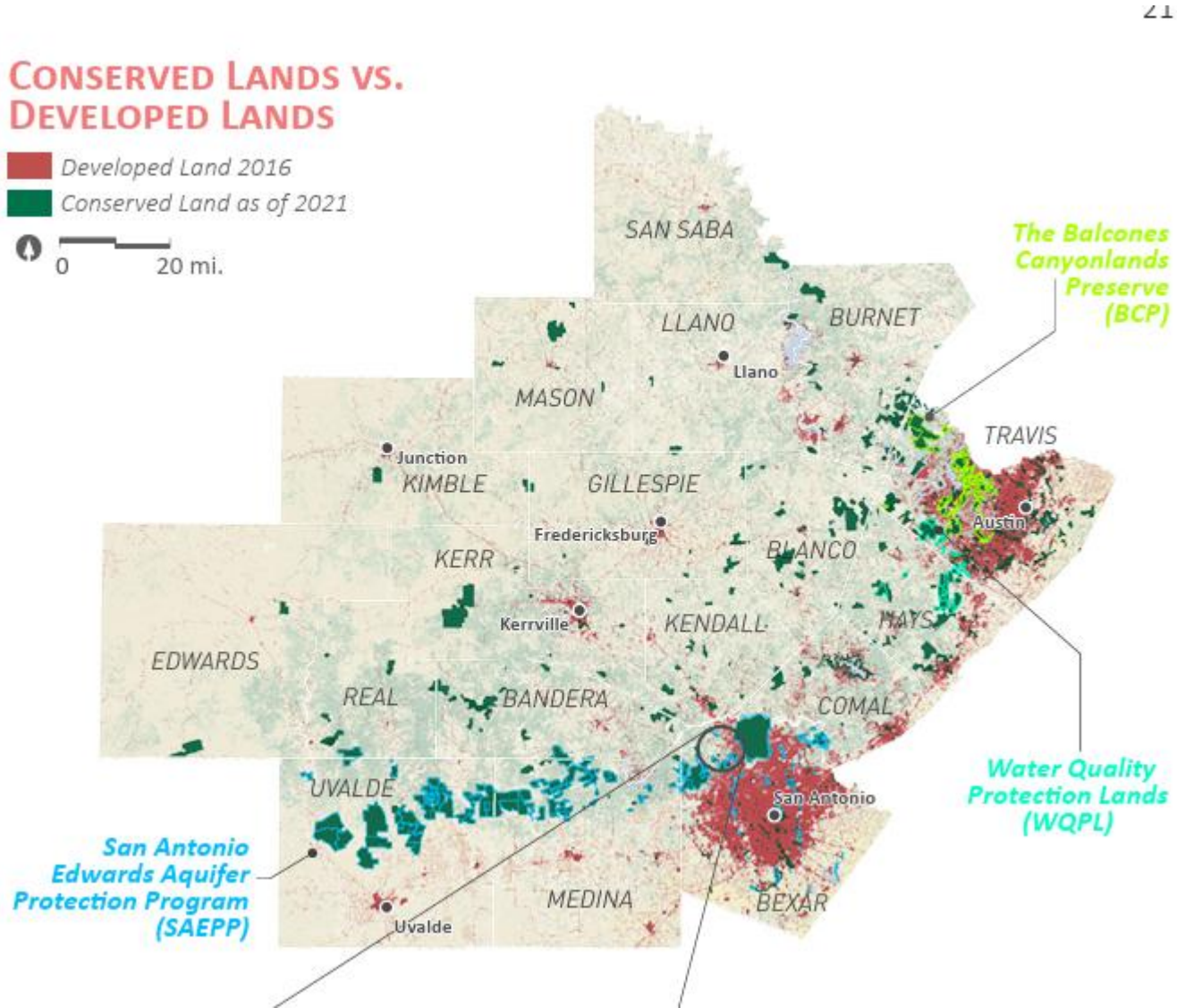
Gift this article

Challenge #5: Local regulators have limited tools

- GCDs must honor that groundwater is a private property right.
- Counties can’t do zoning or regulate impervious cover.

What can we do about these challenges?

1. Conserve & Restore the Landscape.



ABOUT PROPOSITION A

Source: Kendall County

HILLSIDE STEWARDSHIP LANDOWNER WORKSHOP

Join us in the field for a hands-on workshop to learn and use low-cost, low-tech methods for enhancing land health. **Bring your work gloves!** During this field day, we will build log and rock structures to mitigate erosion, enhance drought and flood resilience, and increase plant production.

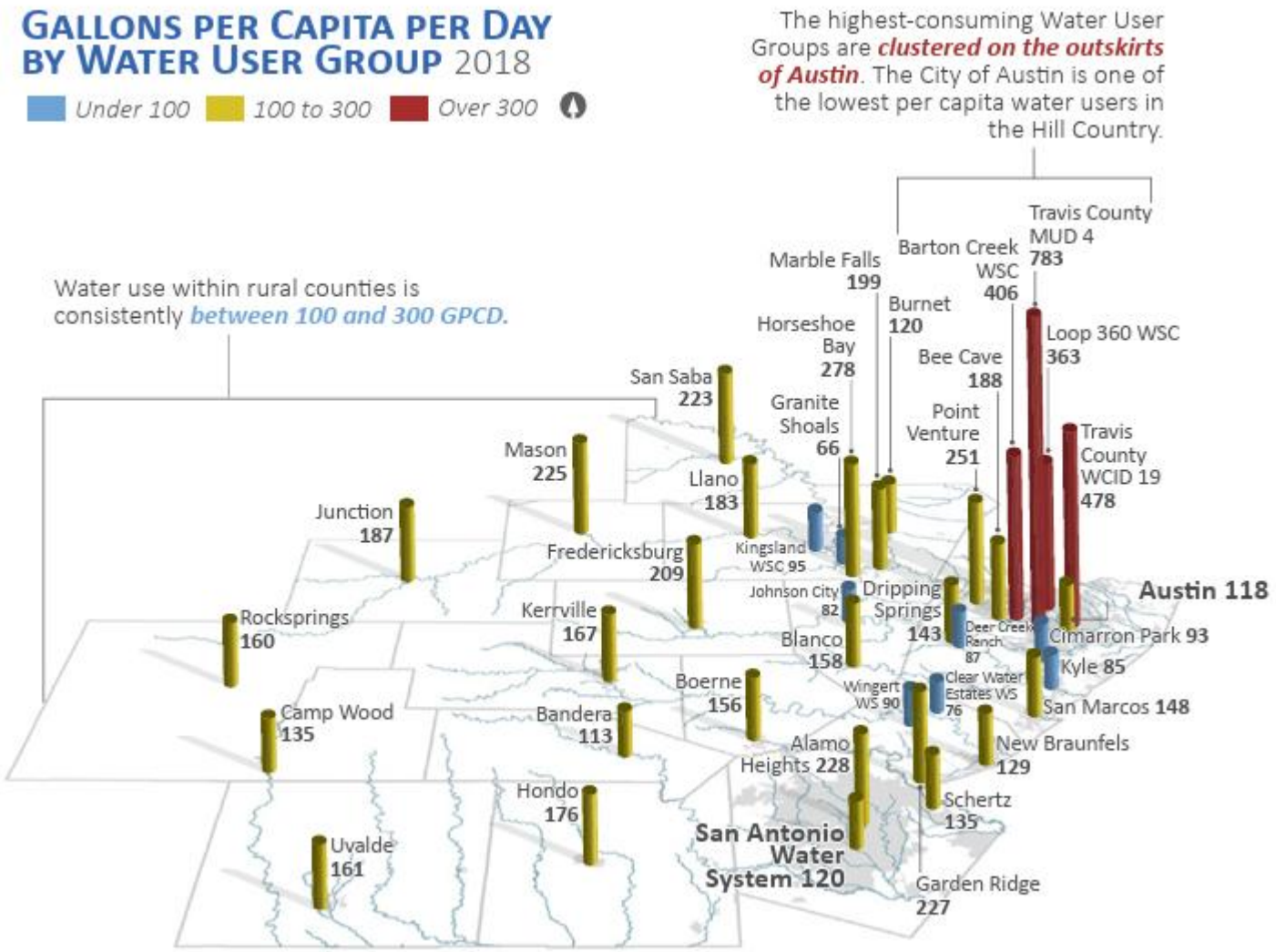
WHERE: PURE PASTURES RANCH, CANYON LAKE, TX

WHEN:
SATURDAY | MAY 31, 2025
9:00 AM - 2:00 PM

COST: $30 - LUNCH (LOCAL, GRASS-FED BEEF BURGERS), SNACKS, DRINKS & EDUCATIONAL MATERIALS INCLUDED

SPACE IS LIMITED.

2. Conserve water.



Water managers estimate that 60-70% of potable water goes to LANDSCAPING in the summer!

Rainwater Harvesting in Central Texas

A Practical Guide

Rainwater harvesting gives Texans a reliable way to conserve groundwater and supplement their water supply. This guide shows how to capture and use rain for everything from gardening to drinking.

5 Key Benefits of Rainwater Harvesting

1. RELIABILITY

A 2,000 sq ft roof can collect 40,000 gallons with a 32" annual rainfall. Unlike wells, rainwater systems give homeowners independent control and closer monitoring of their own supply—which is vital during droughts.

2. COST CONTROL

As municipal water prices rise, collecting free rainwater can save thousands of dollars over time. You also avoid the cost of drilling a new or deeper well when supplies run low.

3. WATER QUALITY

Rainwater is clean, soft, and mineral-free, leaving no residue on plumbing, hair, or clothes—unlike groundwater, which can be very hard.

4. EASE OF TREATMENT

Rainwater is simple to treat, and RWH systems are easy to clean and maintain—with plenty of experts available if you prefer not to install or maintain it yourself.

5. ENVIRONMENTAL IMPACT

RWH reduces run-off, erosion, and contamination from sediments, fertilizers and pesticides. It also prevents flooding, transforming stormwater from a hazard into a valuable water source.

hill country alliance

WHAT IS RAINWATER HARVESTING?

Rainwater harvesting is the practice of collecting, storing, and using rain that falls on rooftops or other surfaces. This water can be used for irrigation, livestock, or even household uses—including drinking—when properly filtered and disinfected. Systems range from simple barrels for gardening to fully integrated potable systems for entire homes.

WHY HARVEST RAINWATER IN CENTRAL TEXAS?

Central Texas is experiencing more and more frequent droughts, rapid population growth, and an increasingly stressed and limited groundwater supply. In rural areas, residents often depend on wells that are unable to recharge quickly, may have poor water quality, and can be at risk of drying up entirely. **Fortunately, the region typically receives 25–35 inches of rainfall per year—enough to supply a household if captured and stored effectively.** Rainwater harvesting turns unpredictable storms into a reliable water source.

Feature	20,000-Gallon Rainwater System	Drilled 450' Well System
Initial Cost	$24k-$35k*	$50k-70k+ (deeper = more $)
Reliability	High (with good design)	Variable (risk of going dry)
Water Quality	High, easy to treat	May require advanced treatment or softener
Maintenance	Low (annual UV light changes and quarterly filter changes)	Moderate (pump, testing)
Permitting	Simple local codes	May require well permits

*2025 cost estimates

Image Source: Harvest Rain

MODEL LANGUAGE FOR HOAs IN THE TEXAS HILL COUNTRY

A practical guide for protecting and preserving water resources, native landscapes, and night skies

MARCH 2025

hill country alliance

3. Consider site-generated supplies.

BLUE HOLE PRIMARY SCHOOL CASE STUDY

Strategies:

- Rainwater Harvesting & AC Condensate Capture
- Dual plumbing
- Green stormwater infrastructure
- Onsite wastewater treatment – reuse for irrigation

Benefits:

- Save water & money
  - Projected to reduce use of the Trinity Aquifer by 90 percent compared to neighboring schools
  - Projected to save $800,000 over 30 years in utilities
- Put off infrastructure expansion
- Protect environment and community

Source: Watershed Association

4. Work with the legislature to protect our natural resources.

In booming Central Texas, wastewater is polluting rivers and streams

A bill in the Legislature would protect the last 21 pristine watersheds in Texas. But for years, previous attempts have been defeated by powerful homebuilders.

BY DYLAN BADDOUR, INSIDE CLIMATE NEWS

REPUBLISH ↗ SHARE

APRIL 28, 2025, 5:00 A.M. CENTRAL

Source: Texas Tribune

WHAT PROPOSITION 4 DOES

Repair Leaks

Fixing pipes to stop losing billions of gallons yearly.

Ensure Safety

Cleaner, more reliable water with fewer boil notices.

Support Growth

Securing more water supply for Texas jobs, families, and businesses.

Protect Resources

Conserving rivers, springs, and aquifers for generations.

Source: texaswaterfund.com

What YOU can do

- Learn about Prop 4 and make a plan to vote
- If you water your landscape and don't already harvest rain, explore if that might be an option for you.
- If you're in an HOA, look at your Landscape Guidelines. If there's an opportunity to improve them so that they might better promote water-wise landscapes, get in touch!
- Join our newsletter to stay informed on Hill Country Water News.

Questions?

Marisa@HillCountryAlliance.org

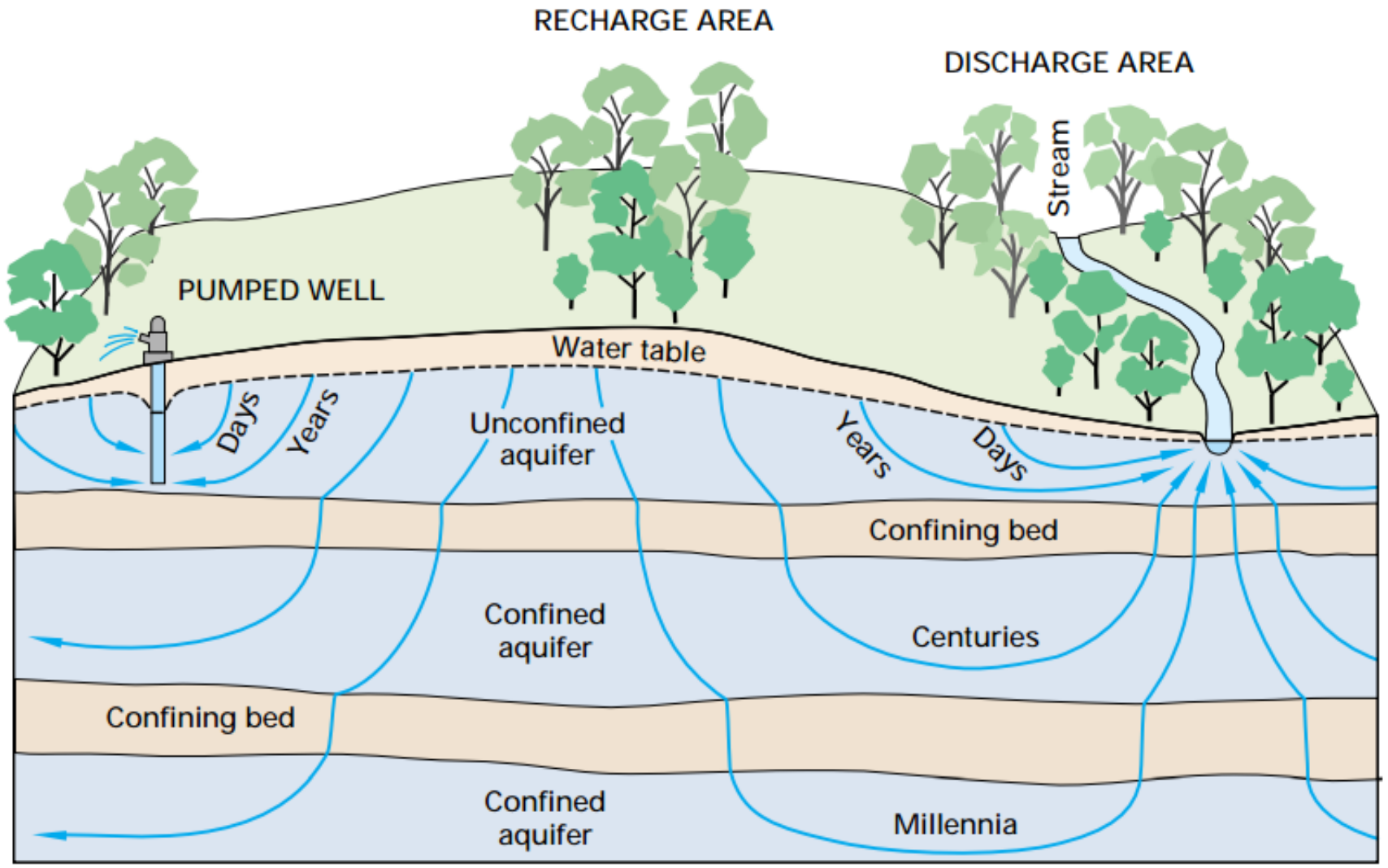
Hillcountryalliance.org/onewater

My goal is for you to understand the basics of water in the Hill Country so you can become better advocates for sustainable water practices (and policy) in your community and the state.

DIRT & ROCKS

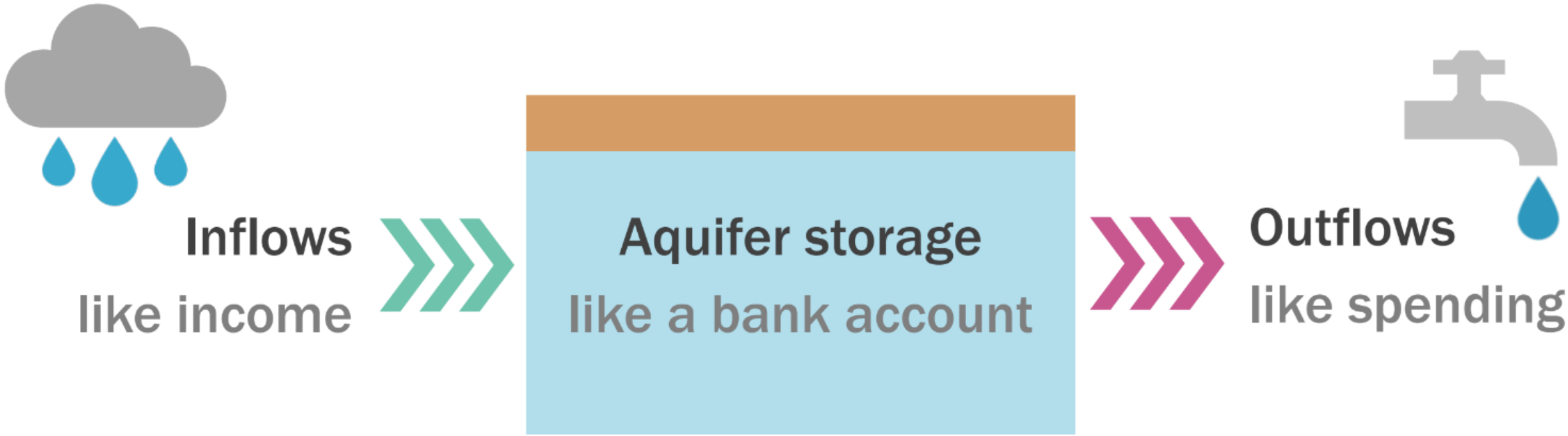
An aquifer is a **geologic media** that can yield **economically usable** amounts of water

Source: Natalie Ballew, Texas Water Development Board


RECHARGE AREA
DISCHARGE AREA
Stream
PUMPED WELL
Water table
Days
Years
Unconfined aquifer
Years
Days
Confining bed
Confined aquifer
Centuries
Confining bed
Confined aquifer
Millennia

Source: USGS

Water budgets



Source: Natalie Ballew, Texas Water Development Board