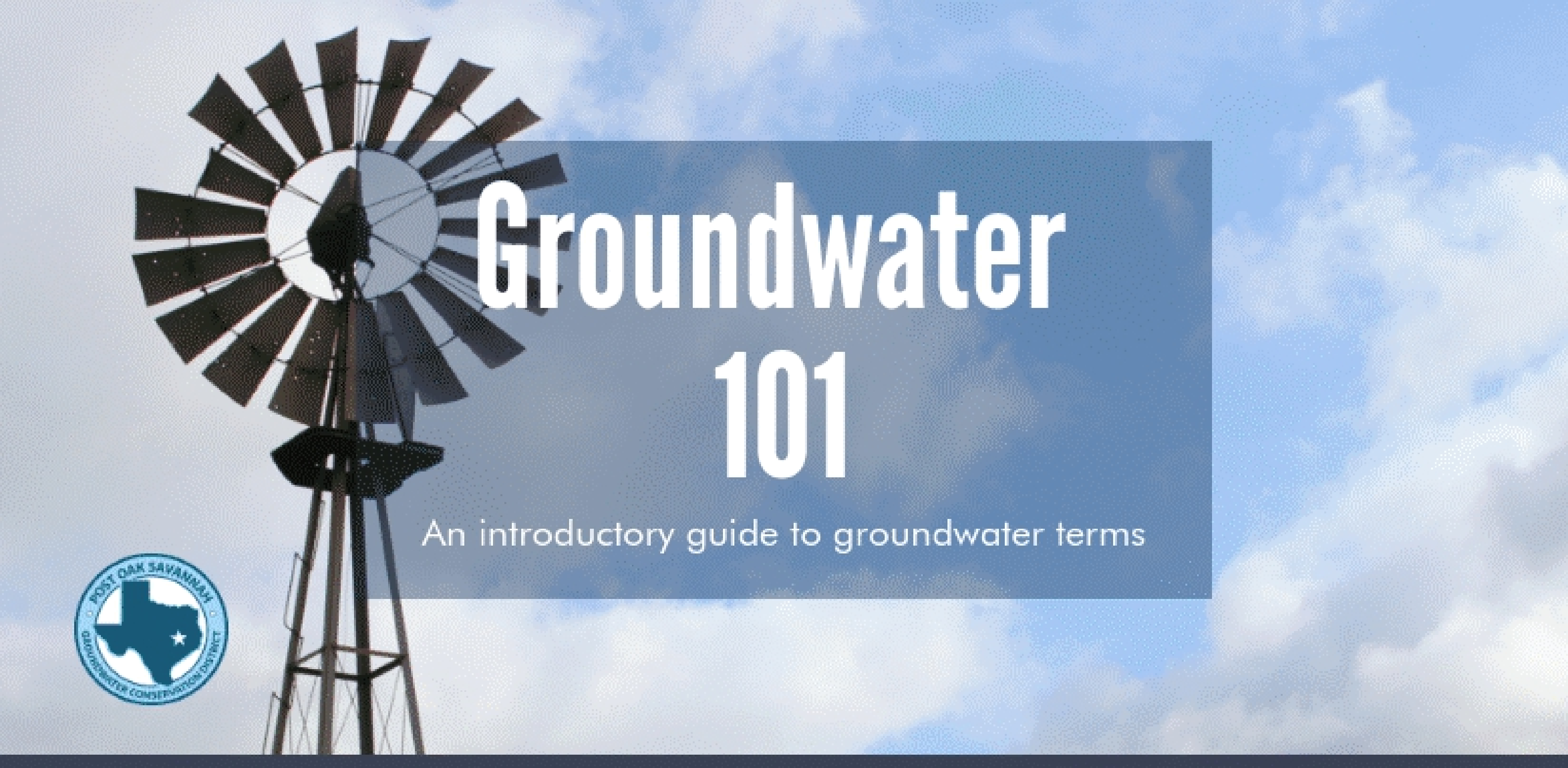


# Groundwater 101

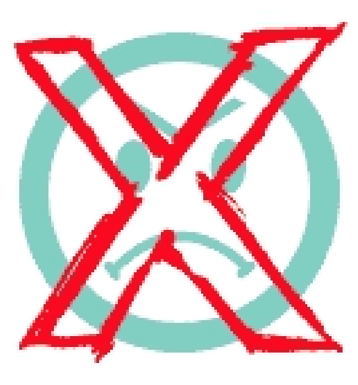
An introductory guide to groundwater terms

Groundwater is a private property owned by landowners. The Texas Legislature and Texas Supreme Court recognize that landowners have a constitutionally protected property right in groundwater and own the groundwater below the surface as real property, subject to the rule of capture and regulation by GCDs.

## Rule of Capture

Rule of Capture is the common law rule that Texas adopted in 1904. This rule grants landowners a legal right to capture water beneath their property without regard to effects on other wells except in cases of willful waste or malicious harm to a neighbor.

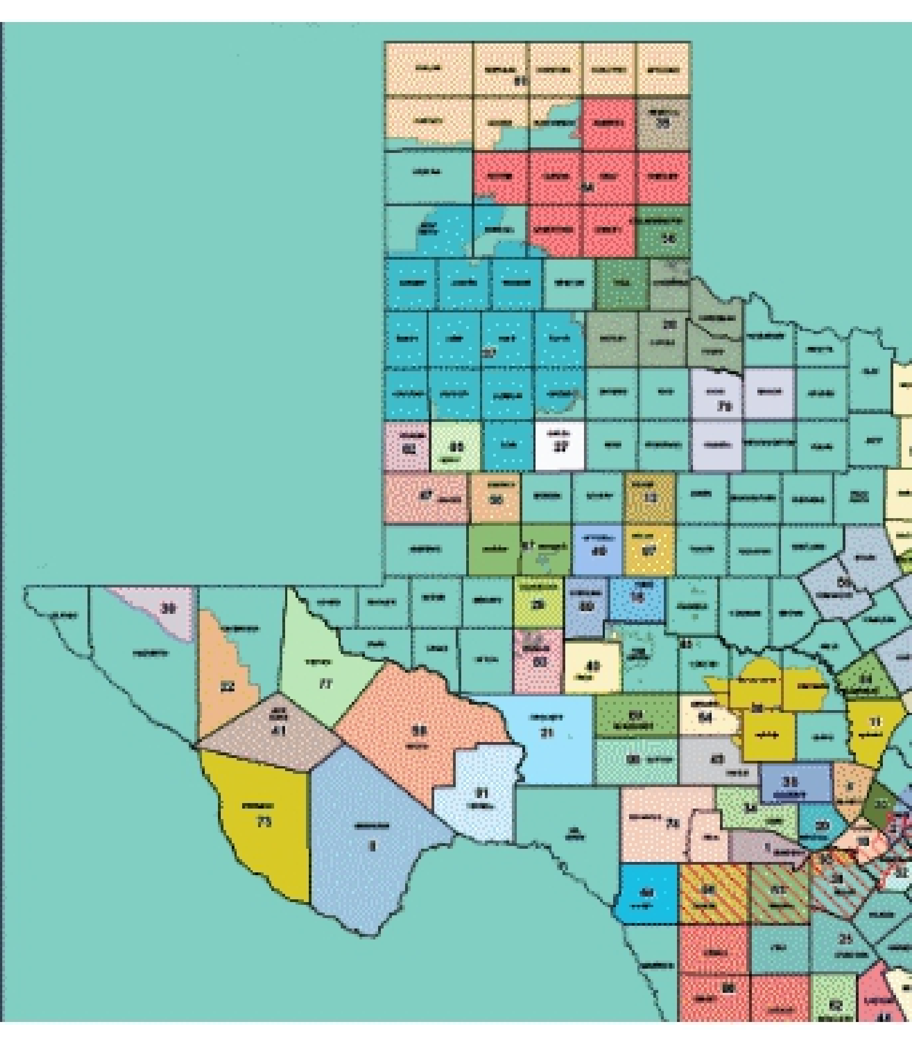
Willful Waste of Water

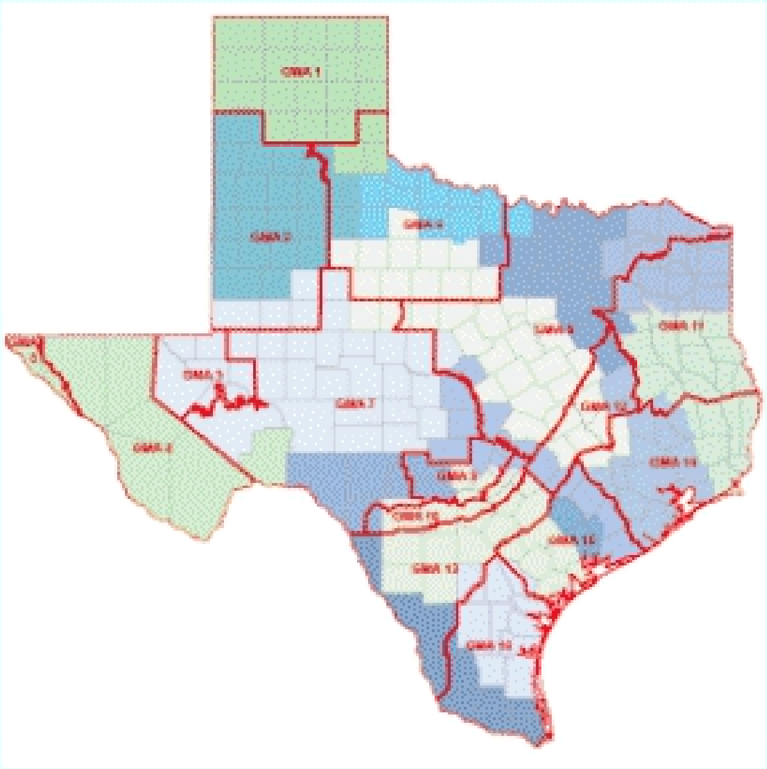


Malicious Harm to Neighbor

## What is a GCD?

Groundwater Conservation Districts are political subdivisions created to protect aquifers and manage the use of groundwater. GCDs are granted authority in Chapter 36 of the Texas Water Code to manage groundwater production through various methods, including well spacing and production limitations. A common tool for managing aquifers is a Desired Future Condition.





## Groundwater Management Areas

Groundwater Management Areas are designated by the TWDB for regional planning purposes. GCDs within a GMA meet to jointly develop DFCs for the GMA region.

## Texas Water Development Board

The Texas Water Development Board is the state agency responsible for overseeing state and regional water planning, providing financial assistance from local government water projects, and studying the state's surface water and groundwater resources.

## Texas Alliance of Groundwater Districts

The Texas Alliance of Groundwater Districts is a 501(c)(3) educational association made up of more than 80 GCDs and 30 associate members. TAGD assists GCDs, provides outreach and education, and facilitates groundwater communication.

## Groundwater Conservation District Index

The Groundwater Conservation District Index is available on TAGD's website and is a searchable, interactive online information bank of GCD data.

## How is groundwater managed?

There are many different tools that GCDs and GMAs use to manage the aquifers and groundwater in their districts and regions. Common tools include management plans, DFCs, GAMs, and MAGs.

## Management Plan

A plan is adopted by a GCD, approved by the TWDB, and forwarded to regional water planning groups that outlines the GCD's management goals and objectives. The plan must include performance standards, methods for achievement, and groundwater estimates.

### GAM

Groundwater availability modeling is the process of developing and using computer programs to estimate future trends in the amount of water available in an aquifer and is based on hydrogeologic principles, actual aquifer measurements, and stakeholder guidance.

### MAG

The Modeled Available Groundwater is calculated by the TWDB and is the amount of water that may be produced on an average annual basis to achieve a DFC. The MAG is one tool used by GCDs to ensure consistency with the DFC and is used by regional water planning groups.

### DFC

A Desired Future Condition is a quantifiable condition of an aquifer at a specified future time. It may be based on aquifer levels, spring flows, or volumes of water in the aquifer. In setting DFCs, GCDs balance groundwater production with conservation and protection on a long-term basis to achieve and maintain the DFC.

## Joint Planning

The process by which GCDs in a GMA work together to develop DFCs, review groundwater management plans, assess the accomplishments of the GMA, and evaluate the need to modify the DFCs.

Your local GCD is governed by a board of directors that are appointed or elected. GCDs are the state's preferred method of groundwater management through rules developed, adopted and promulgated by a district (Texas Water Code, Sec. 36.0015).

If you have any questions about your District, visit
https://texasgroundwater.org/resources/gcd-index/
and contact your local GCD.

Sources
TAGD: texasgroundwater.org
TWDB: twdb.texas.gov