

Groundwater Conservation Districts In Texas

East Texas
Fruit & Vegetable Conference
Tyler, Feb. 19, 2002

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Today.....

- Groundwater Resources
- Water Supply and Demand Projects
- Overview of Texas Water Law
- Powers and Responsibilities of Districts
- Financing of Districts
- Questions.....

Managing Texas' Groundwater Resources

- Texas has extensive groundwater resources
- About 60% of total freshwater use is from groundwater

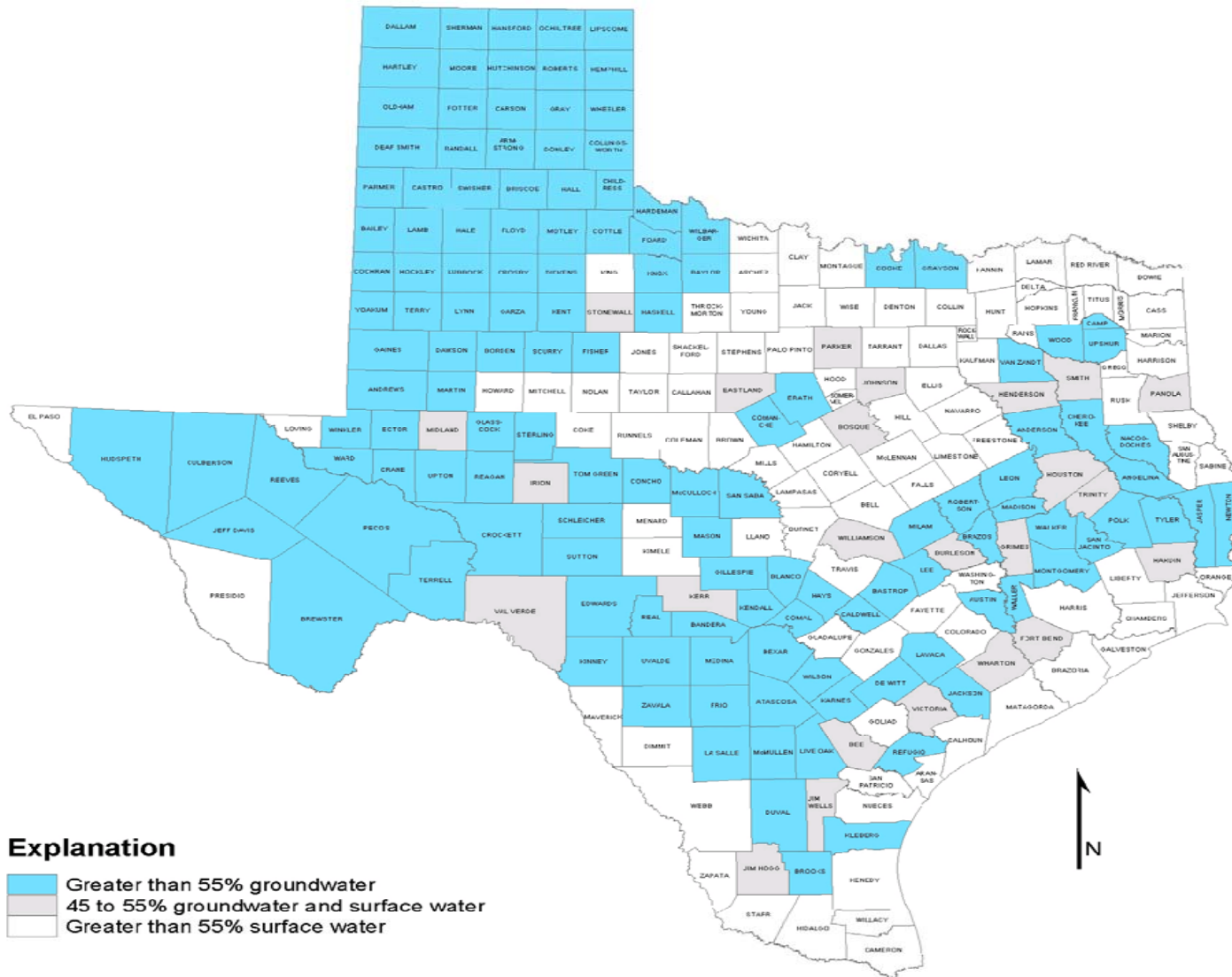


Figure 5-6 Analysis of total water use in Texas in 1999 by county illustrating dominant supply source.

Major Aquifers of Texas

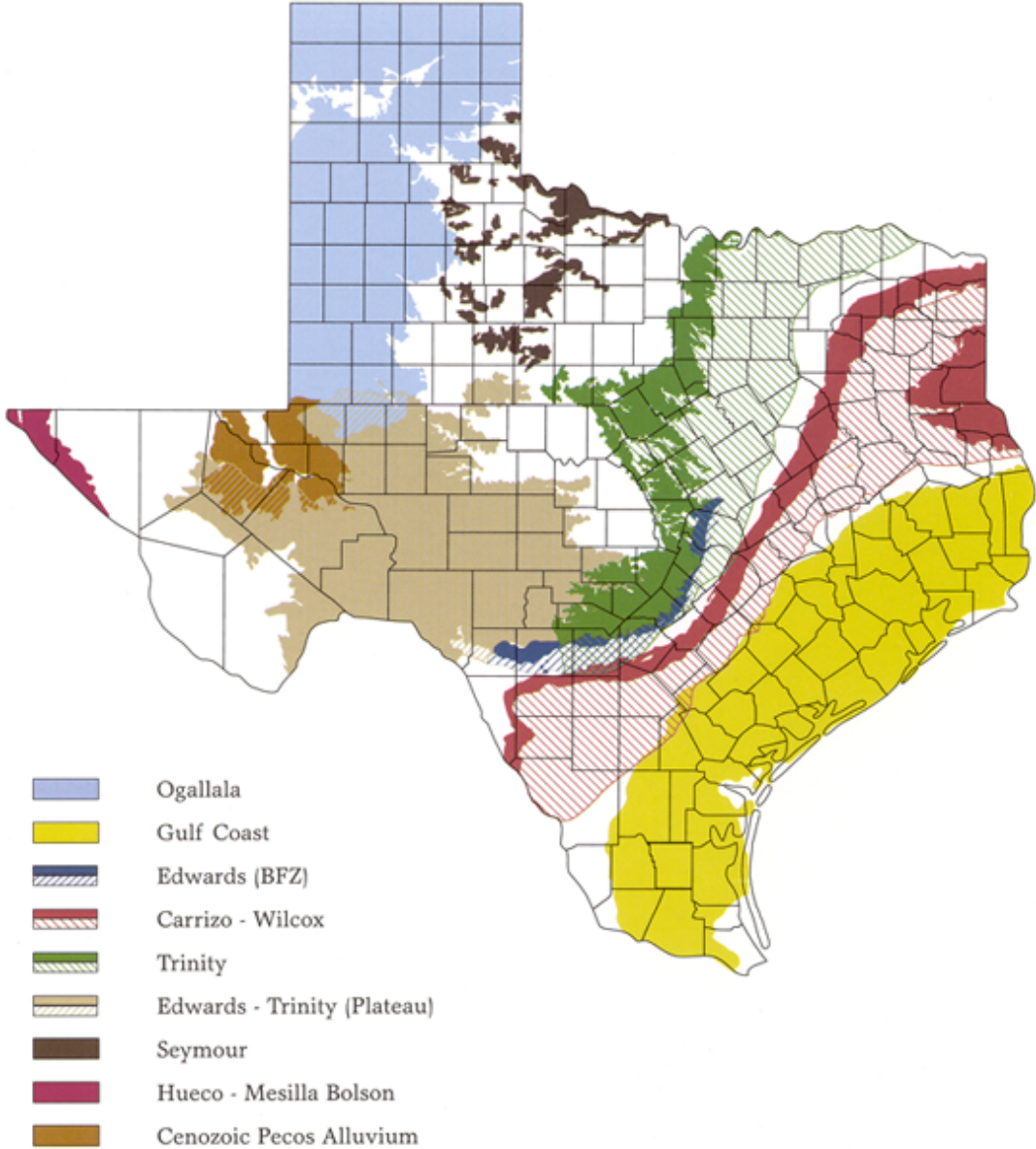


Figure 1. Nine major aquifers account for 96.3 percent of all groundwater withdrawals in Texas.

Minor Aquifers of Texas

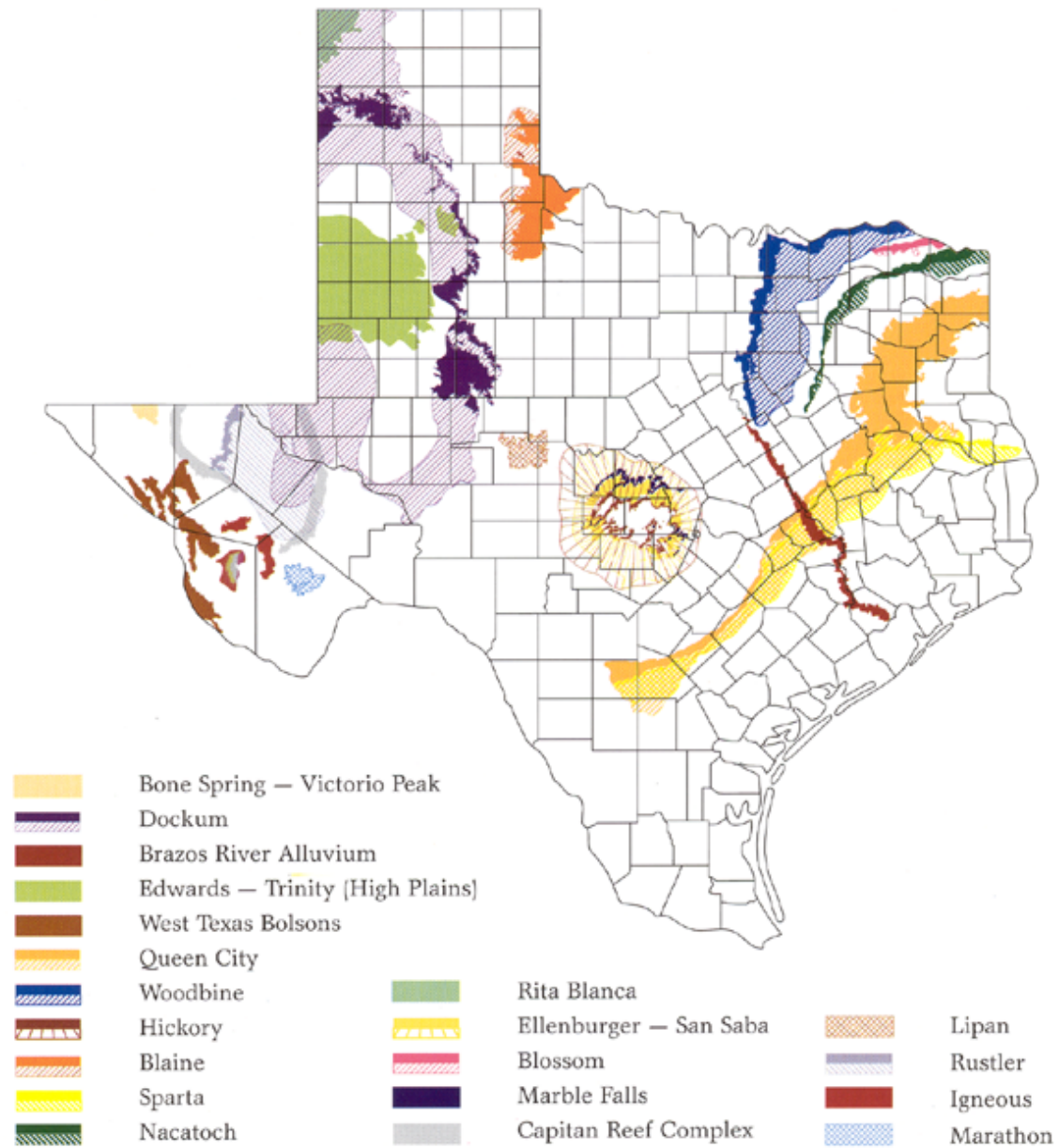
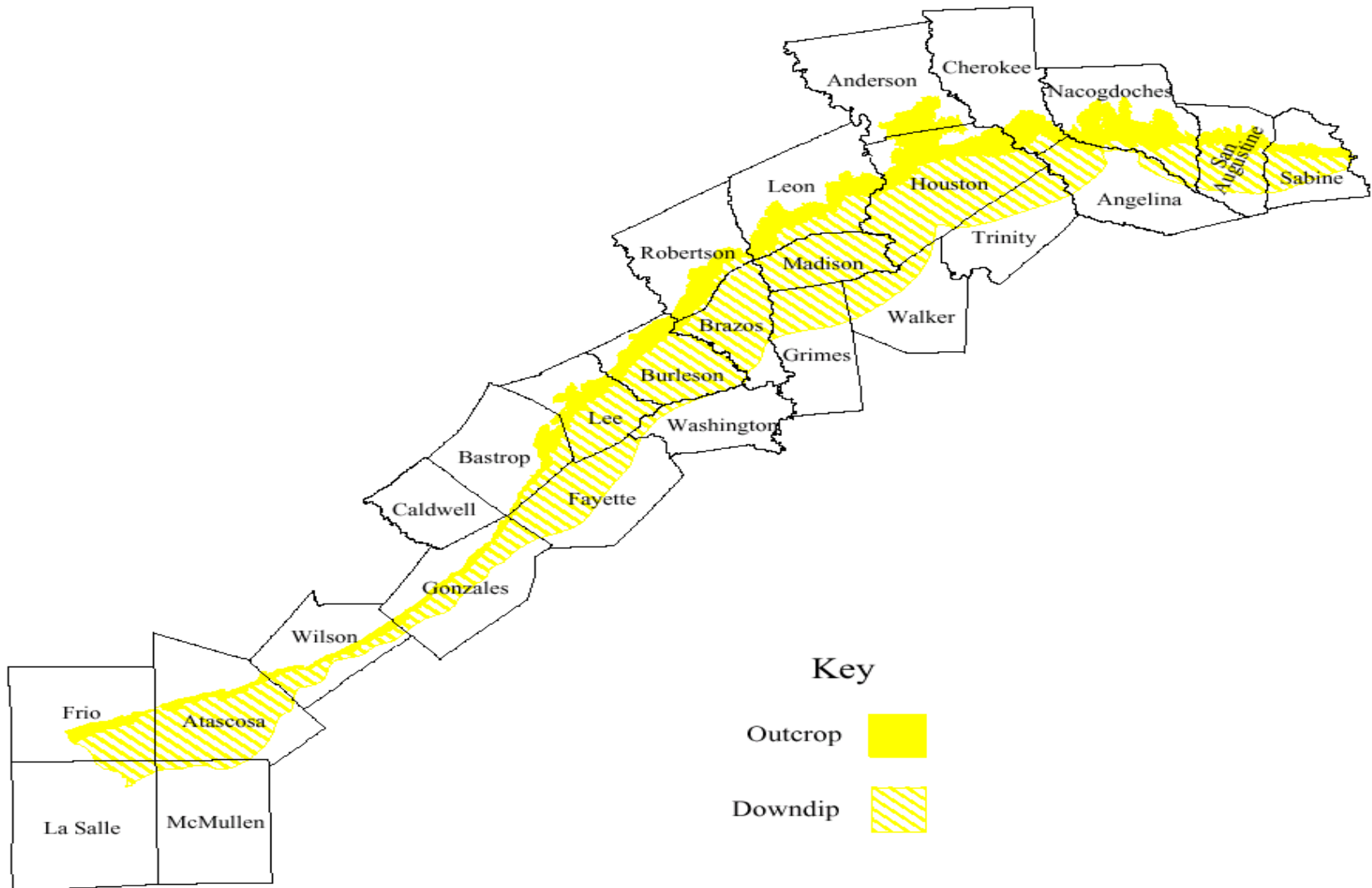
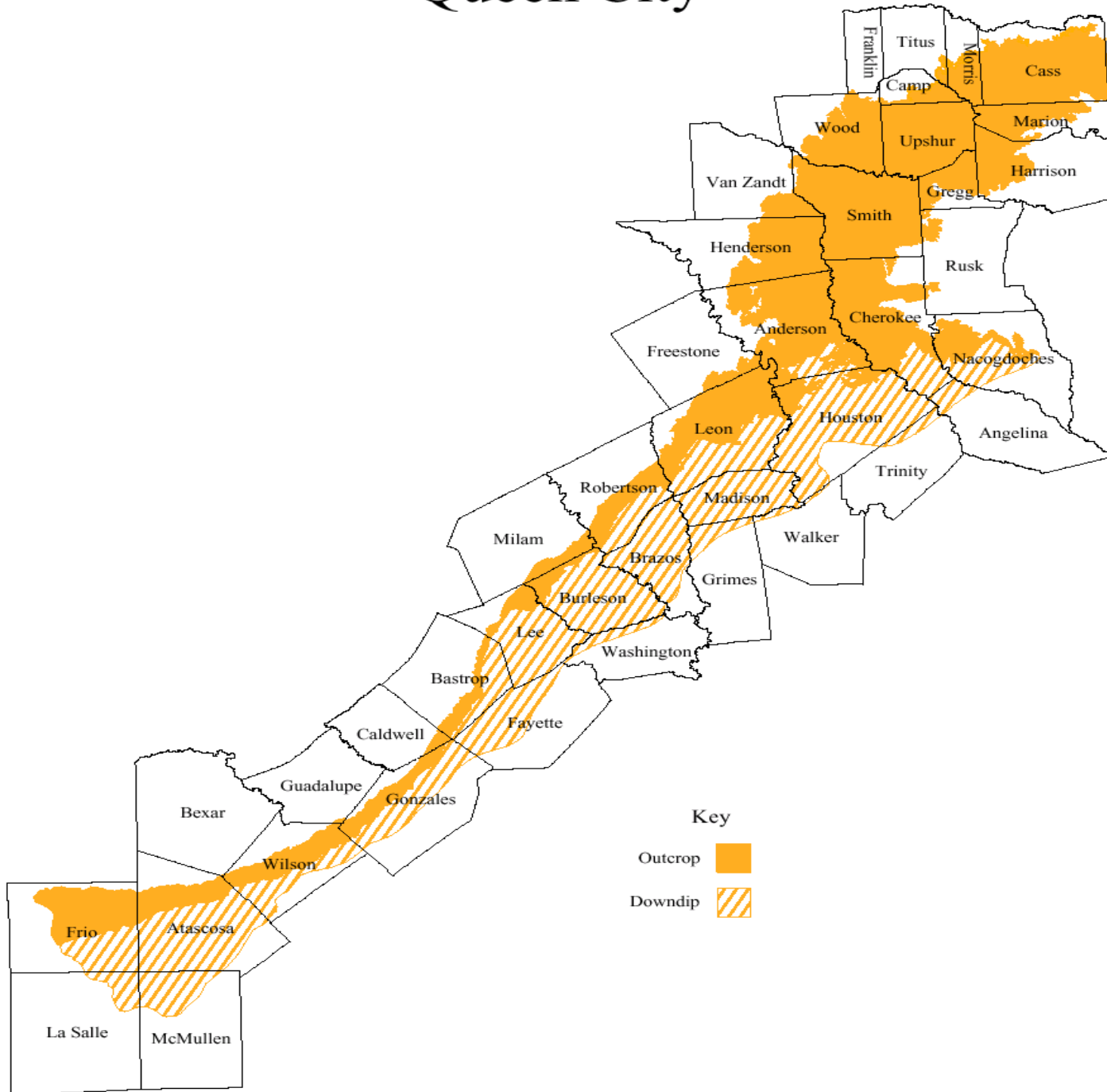


Figure 2. The 20 minor aquifers of Texas account for 3.7 percent of all groundwater withdrawals.

Sparta



Queen City



Managing Texas' Groundwater Resources

- Population and industrial growth in Texas is forecasted to outstrip available supply
- Groundwater depletion and competition is a major problem in parts of the state

AREAS EXPERIENCING SIGNIFICANT
GROUND-WATER LEVEL DECLINE,
1980-1990

BY
JANIE PAYNE, GEOLOGIST
1991

- Declines of 20-40 feet in water table areas
- Declines greater than 40 feet in water table areas
- Declines of 50-100 feet in artesian areas
- Declines greater than 100 feet in artesian areas

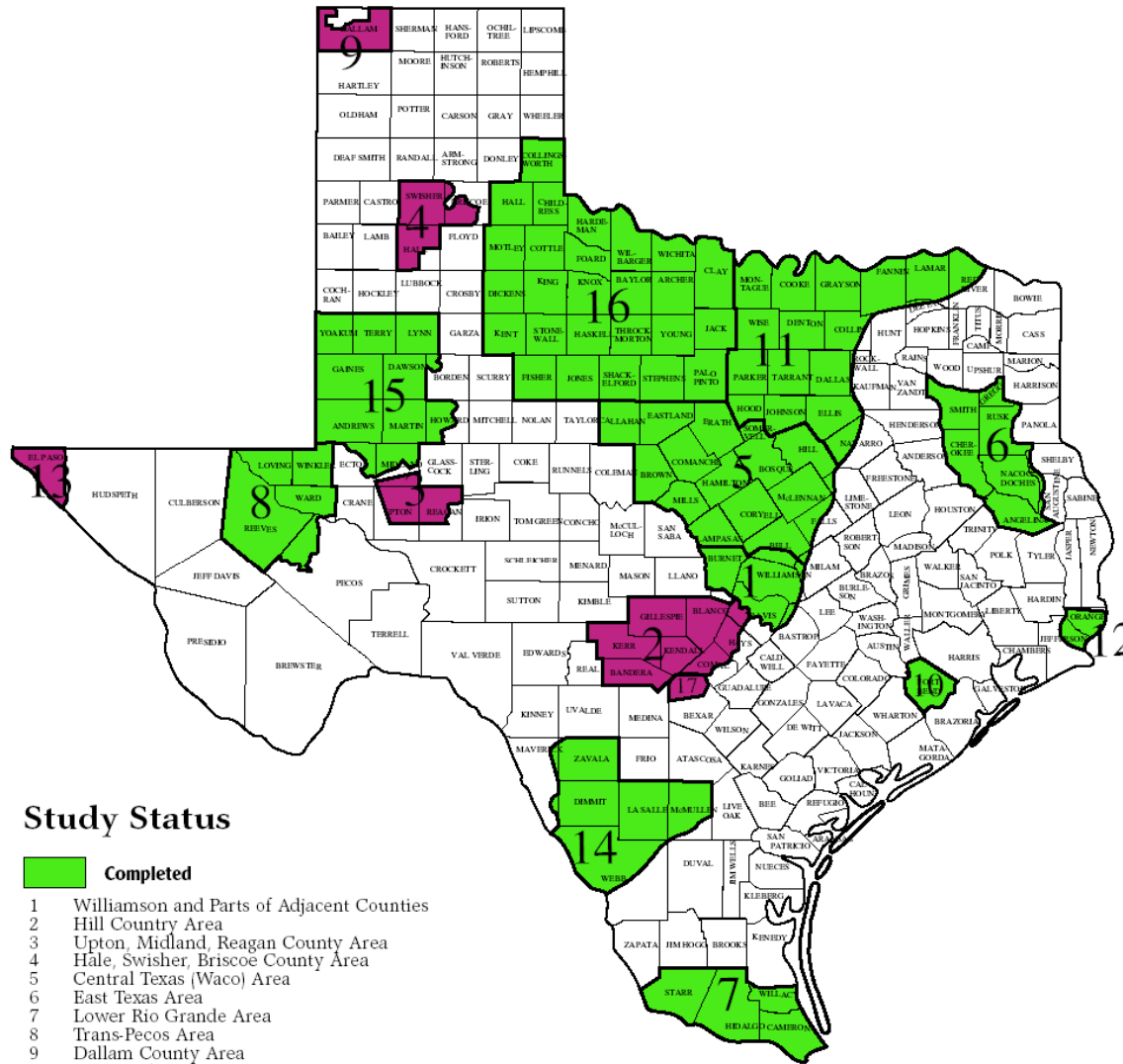


Areas in Texas With
Existing or Potential
Underground Water Problems



- Areas proposed for detailed study by TWC/TWIF
- Critical areas proposed by TWC July, 1995

Priority Groundwater Management Area Studies



Study Status

Completed

- 1 Williamson and Parts of Adjacent Counties
- 2 Hill Country Area
- 3 Upton, Midland, Reagan County Area
- 4 Hale, Swisher, Briscoe County Area
- 5 Central Texas (Waco) Area
- 6 East Texas Area
- 7 Lower Rio Grande Area
- 8 Trans-Pecos Area
- 9 Dallam County Area
- 10 Fort Bend County Area
- 11 North-Central Texas Area
- 12 Orange-Jefferson County Area
- 14 Winter Garden Area
- 15 Southernmost High Plains Area
- 16 North Texas Alluvium and Paleozoic Outcrop Area

Designated PGMA's

- 2 Hill Country PGMA
- 3 Upton, Midland, Reagan County PGMA
- 4 Hale, Swisher, Briscoe County PGMA
- 9 Dallam County PGMA
- 13 El Paso County Area
- 17 Northern Bexar County (Added to the Hill Country PGMA)

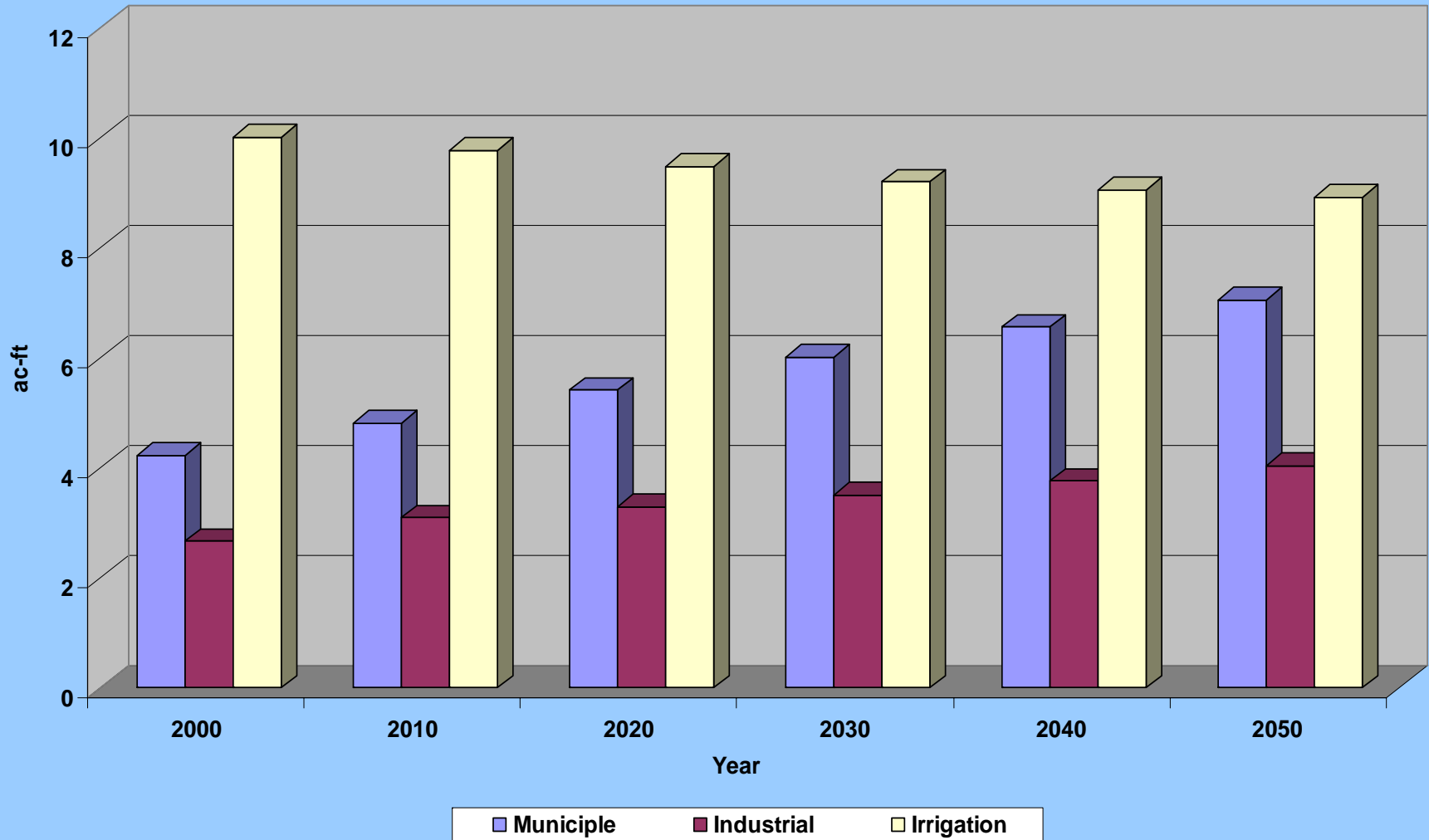
STATE WATER PLAN

Water for Texas 2002

Texas Water Development Board

(Currently being printed and posted to
TWDB Website)

Water Use in Texas by Category



Projected Water Supply/Demand and Population for Texas

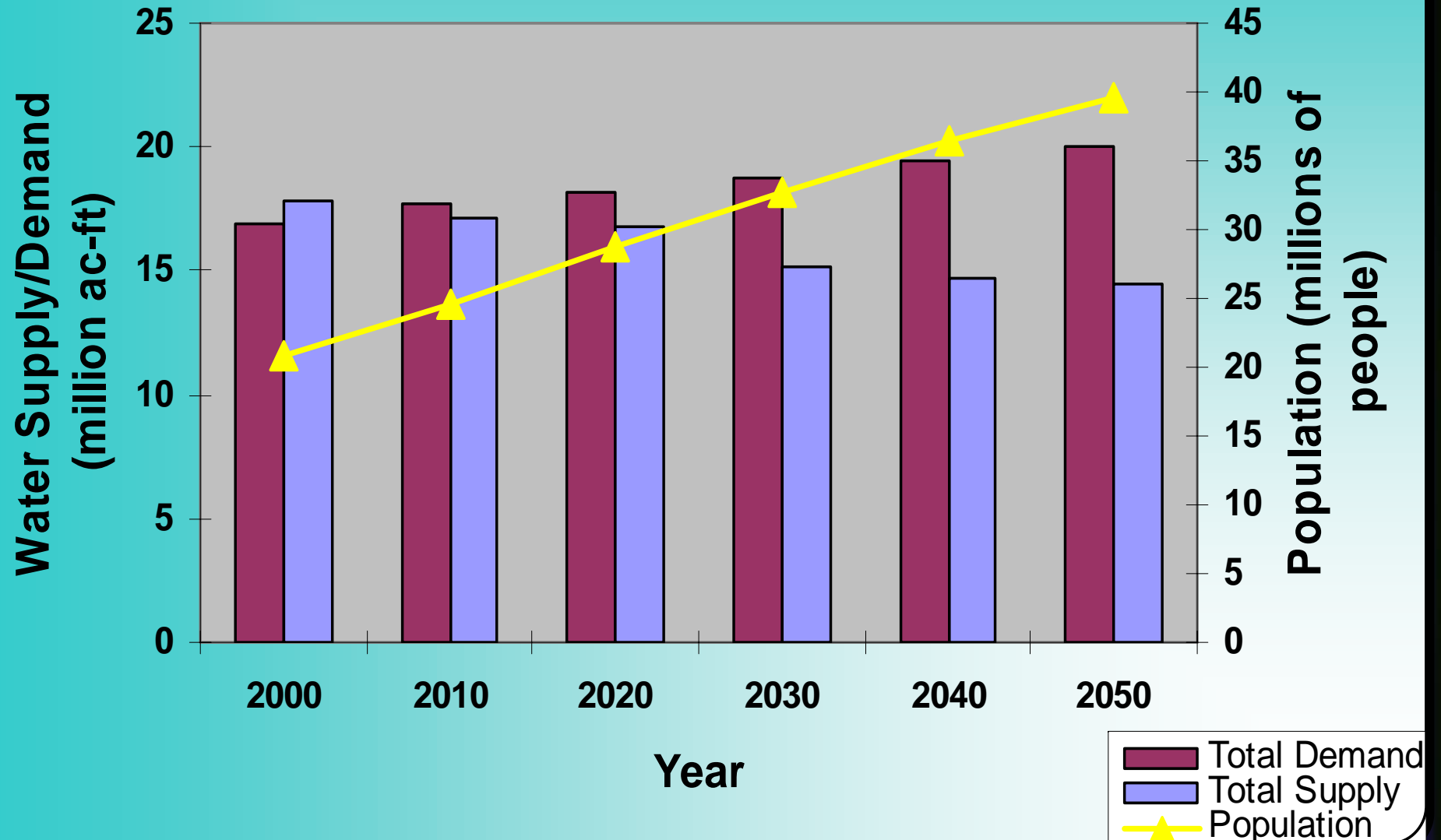
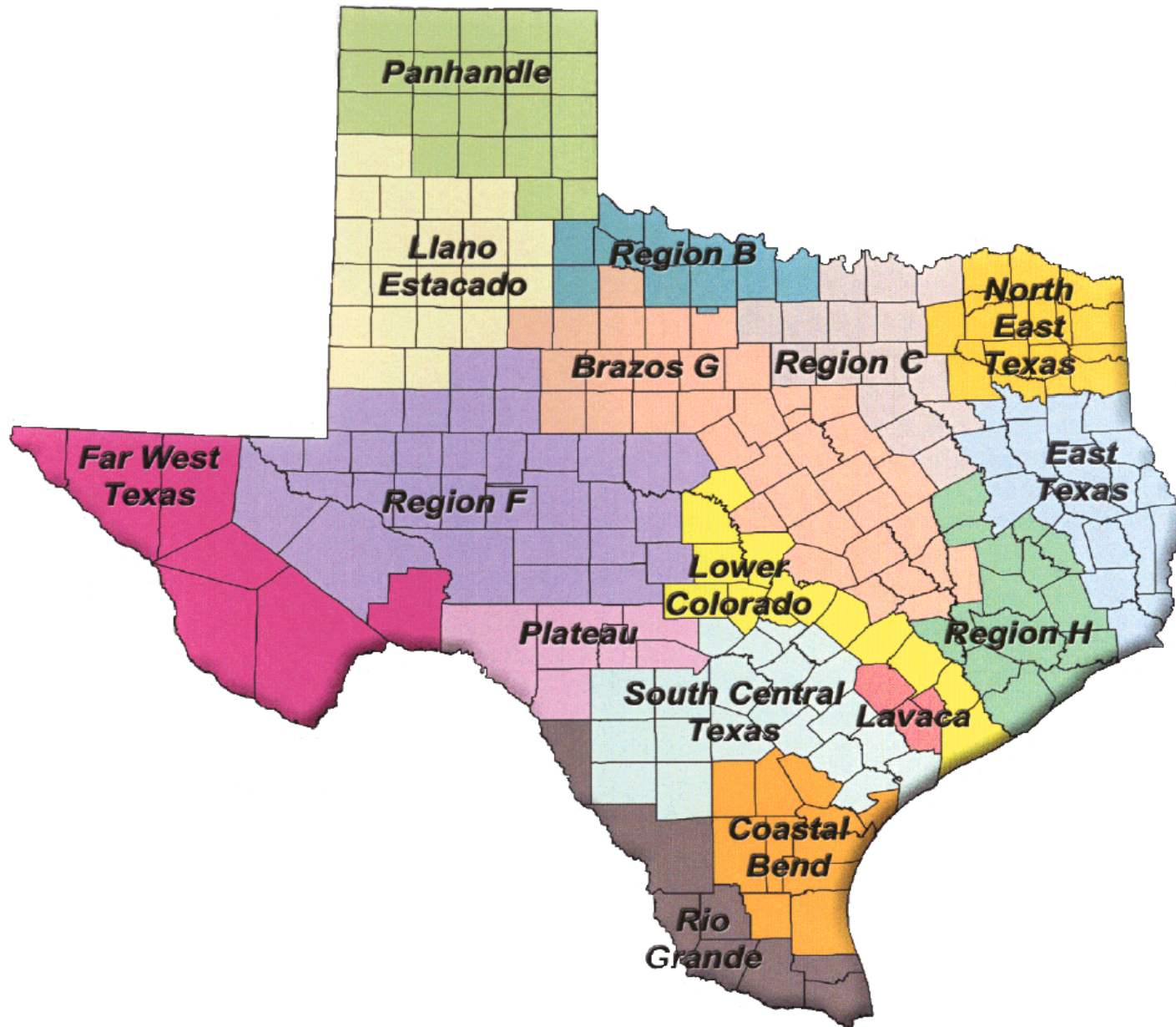
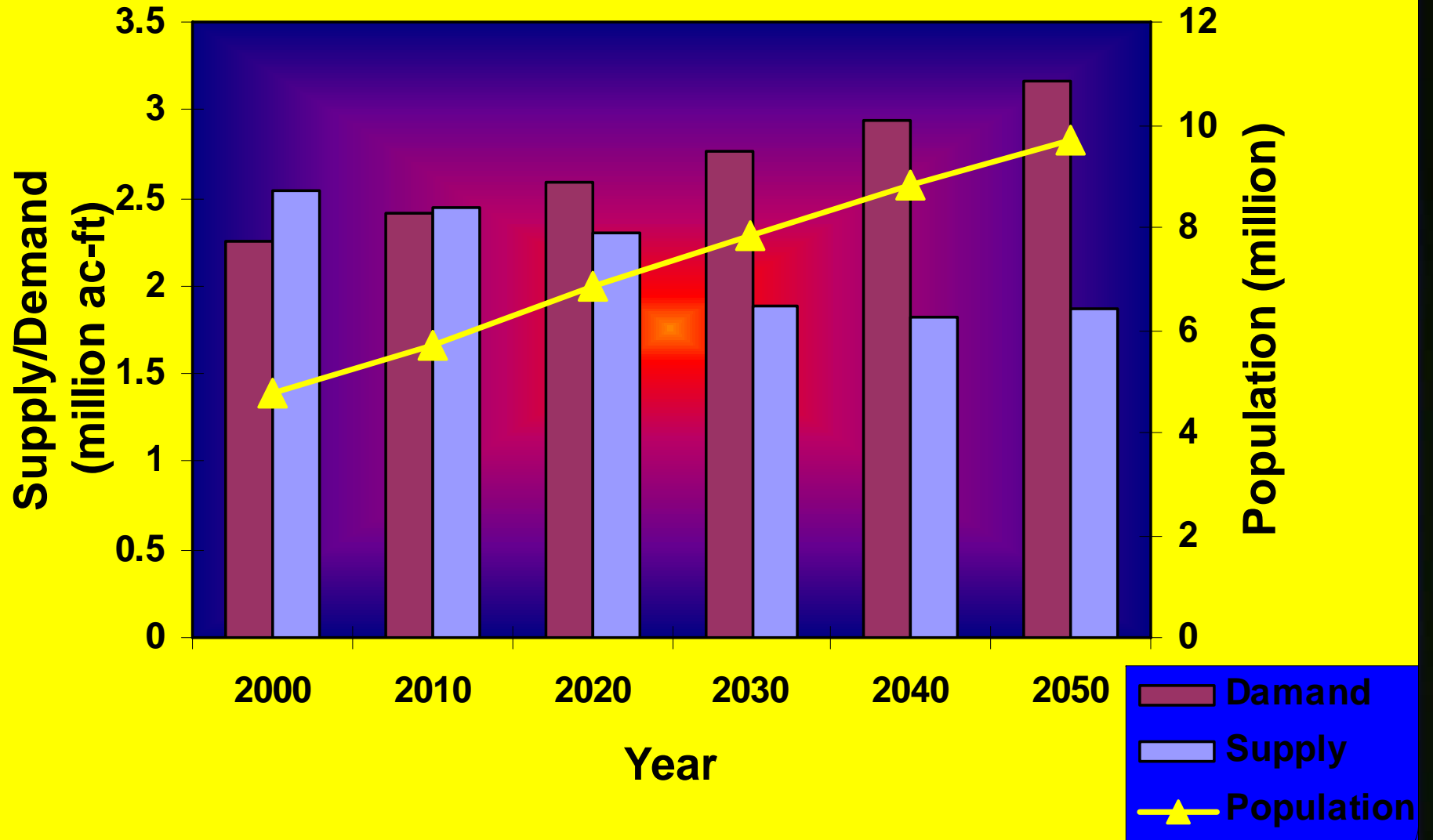


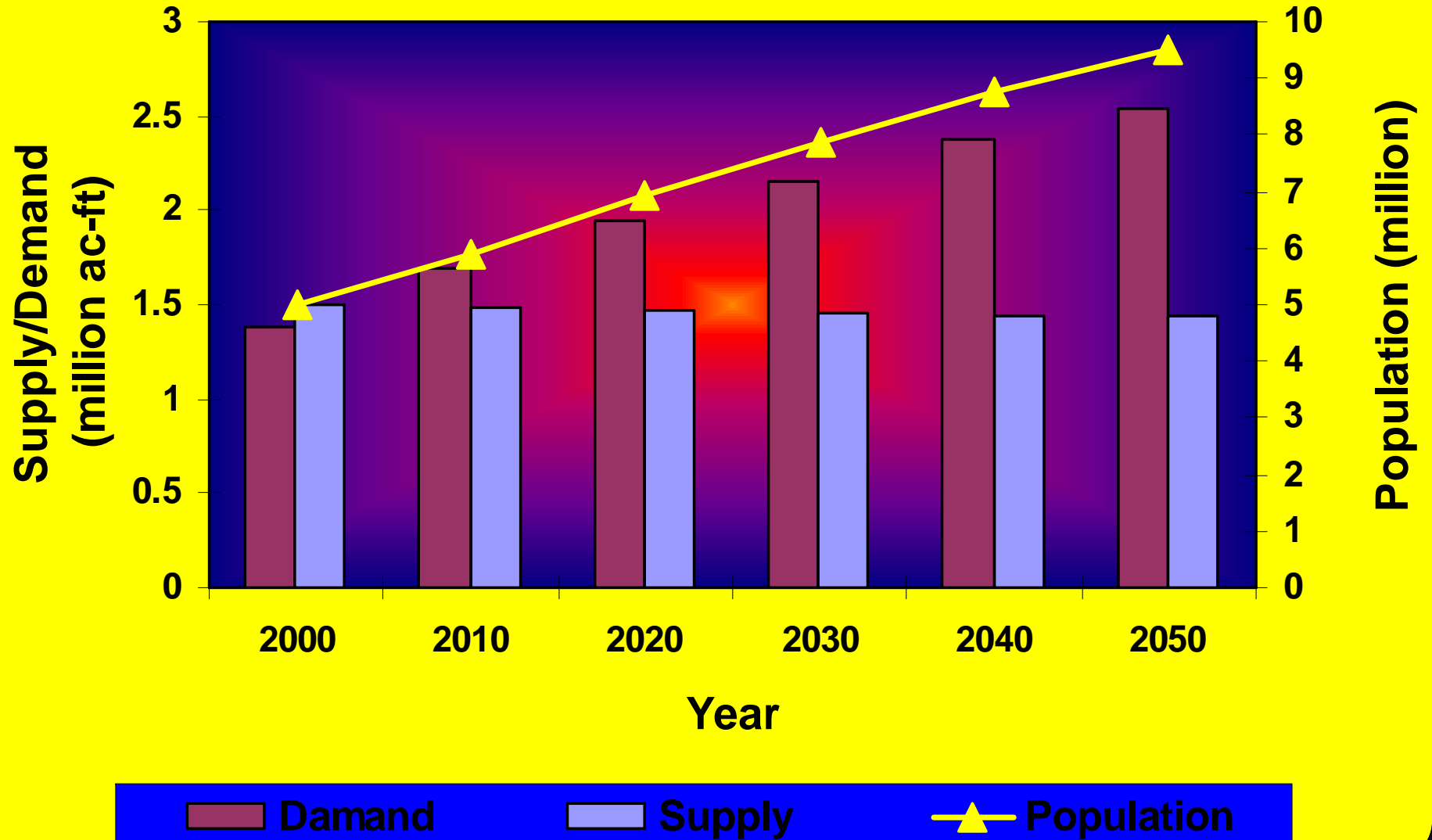
Figure 4-1: Location of the 16 regional water planning areas in Texas.



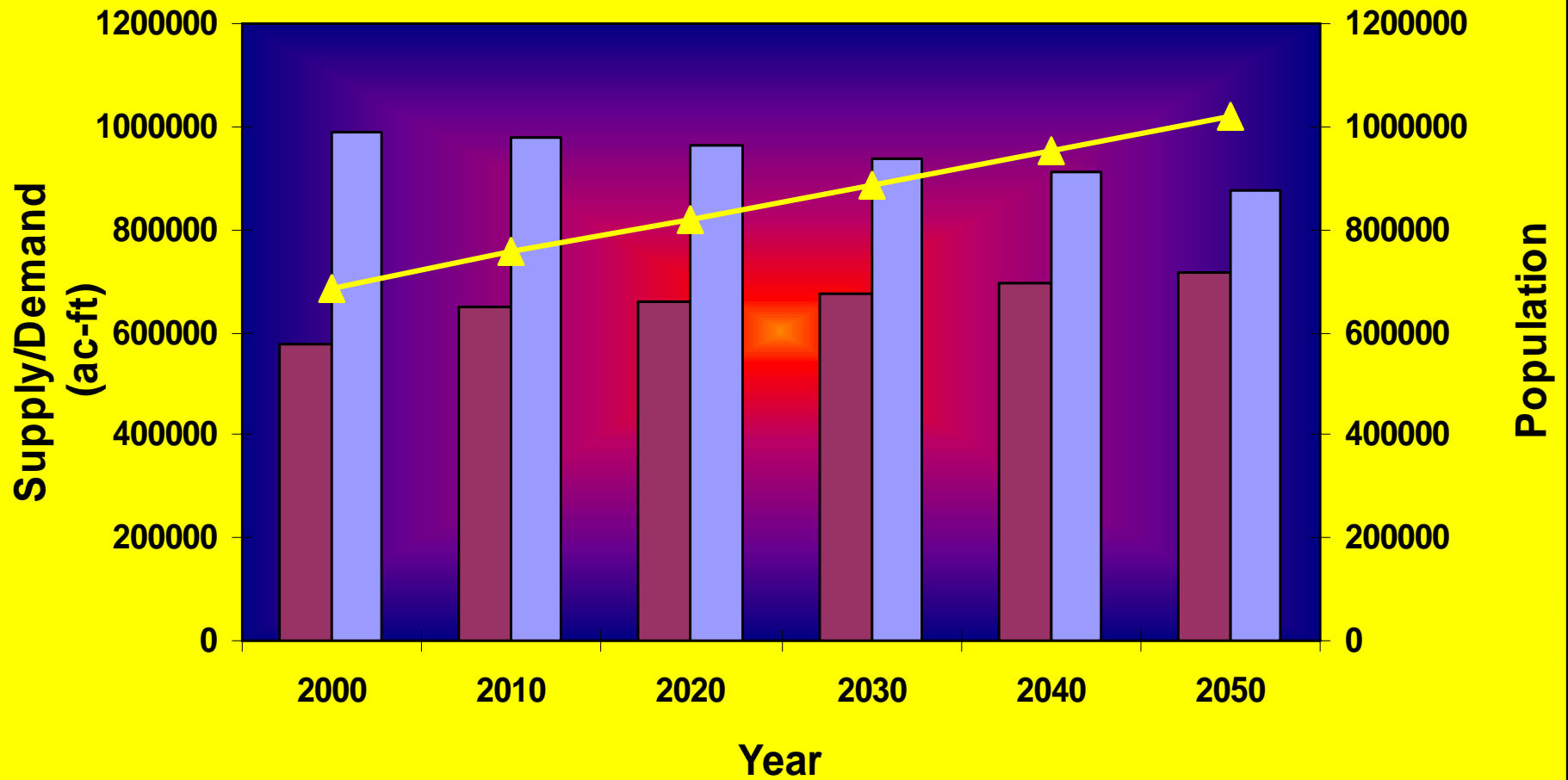
Projected Water Supply/Demand and Population for Region H



Projected Water Supply/Demand and Population for Region C

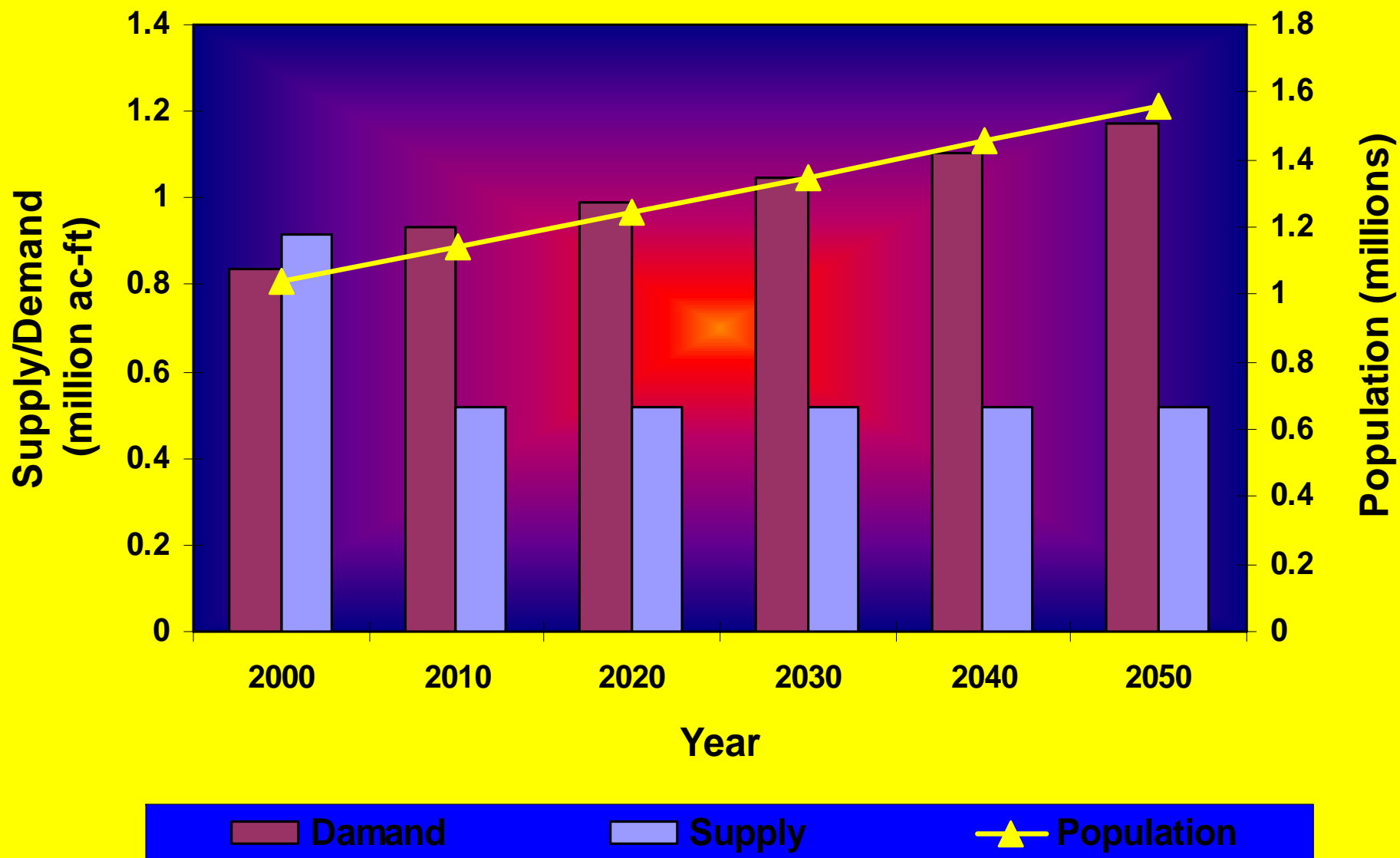


Projected Water Supply/Demand and Population for Region D (North East Texas Region)



Demand **Supply** **Population**

Projected Water Supply/Demand and Population for Region I (East Texas Region)



Texas Water Law

Surface Water and Groundwater are treated differently under the Law

Texas Water Law

Surface Water

- All surface water (except "*diffused water*") belongs to the state
- It is "*held in trust*" and appropriated to users through permits or *water rights*

Texas Water Law

Groundwater

- Based on the English common law document or the "rule of capture"
- Landowner has unlimited right to withdraw and make "*non-wasteful*" use of groundwater

Texas Water Law

Non-beneficial use of Groundwater

- Allowing groundwater to escape from one geological formation to another that does not contain water

Texas Water Law

Non-beneficial use of Groundwater

- Polluting a groundwater reservoir by salt water or other substances
- Causing groundwater to escape into surface water without authorization

Texas Water Law

Groundwater

"Law of the biggest pump"

*...the deepest well and most powerful
pump get the water*


GROUNDWATER CONSERVATION DISTRICTS

- First legislation enacted in 1949
- Based on the philosophy of:
locally controlled groundwater conservation districts to manage groundwater resources
- Confirmation election required

Groundwater Districts

Conservation Districts

- 1 Anderson County UWCD
- 2 Barton Springs/edwards Aquifer CD
- 3 Bee GCD
- 4 Bexar Metropolitan Water District
- 5 Blanco-Pedernales GCD
- 6 Brewster County GCD
- 7 Clearwater UWCD
- 8 Coastal Bend GCD
- 9 Coastal Plains GCD
- 10 Coke County UWCD
- 11 Collingsworth County UWCD
- 12 Colorado Valley GCD
- 13 Culberson County GCD
- 14 Dallam County UWCD No. 1
- 15 Edwards Aquifer Authority
- 16 Emerald UWCD
- 17 Evergreen UWCD
- 18 Fort Bend Subsidence District
- 19 Fox Crossing Water District
- 20 Garza County Underground And Fresh WCD
- 21 Glasscock County UWCD
- 22 Goliad County GCD
- 23 Gonzales County UWCD
- 24 Guadalupe County GCD
- 25 Harris-Galveston Coastal Subsidence District

-  Edwards Aquifer Authority
- 34 Kinney County GCD
- 64 Uvalde County UWCD

- 26 Headwaters UWCD
- 27 Hemphill County UWCD
- 28 Hickory UWCD No. 1
- 29 High Plains UWCD No.1
- 30 Hill Country UWCD
- 31 Hudspeth County UWCD No. 1
- 32 Irion County WCD
- 33 Jeff Davis County UWCD
- 35 Lipan-Kickapoo WCD
- 36 Live Oak UWCD
- 37 Llano Estacado UWCD
- 38 Lone Star GCD
- 39 McMullen GCD
- 40 Medina County GCD
- 41 Menard County UWCD
- 42 Mesa UWCD
- 43 Neches&Trinity Valleys GCD
- 44 North Plains GCD
- 45 Panhandle GCD
- 46 Pecan Valley GCD
- 47 Permian Basin UWCD
- 48 Pineywoods GCD
- 49 Plateau UWC And Supply District
- 50 Plum Creek CD
- 51 Presidio County UWCD
- 52 Real-Edwards C and R District
- 53 Refugio GCD
- 54 Rolling Plains GCD
- 55 Salt Fork UWCD
- 56 Sandy Land UWCD
- 57 Santa Rita UWCD
- 58 Saratoga UWCD
- 59 South Plains UWCD
- 60 Springhills Water Management District
- 61 Sterling County UWCD
- 62 Sutton County UWCD
- 63 Texana GCD
- 65 Wintergarden GCD

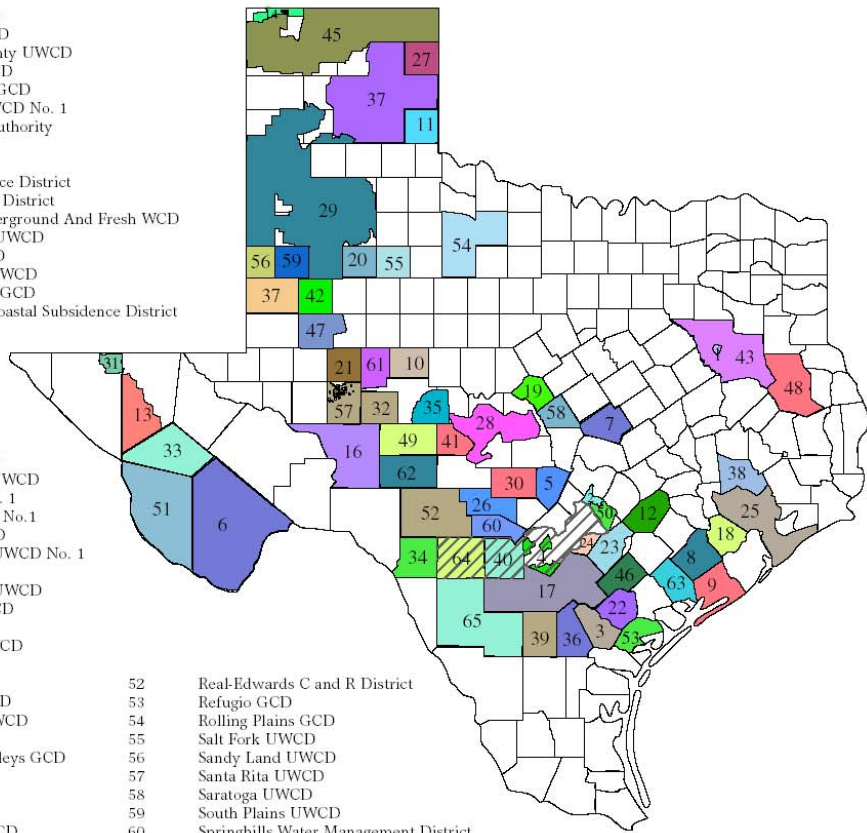
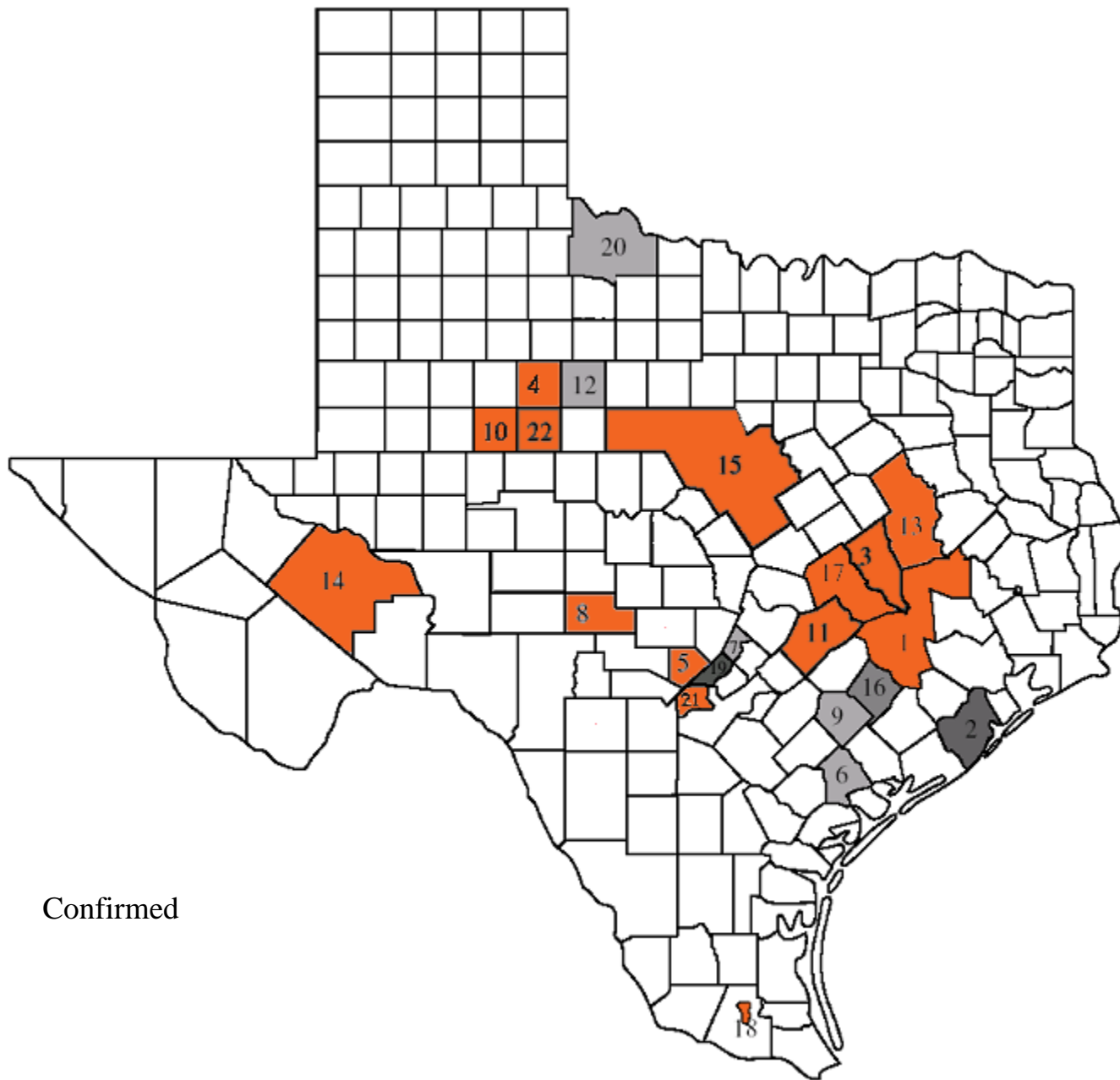


Figure 4. There are 65 confirmed groundwater conservation and special districts in Texas as of January 2002. The Edwards Aquifer Authority contains 3 conservation districts within its territory.



 Confirmed

Unconfirmed Groundwater Conservation Districts Created/Ratified
by 77th Legislature, 2001

| Groundwater Conservation District | Counties | Expiration Date (if not confirmed) |
|-----------------------------------|---|------------------------------------|
| 1. Bluebonnet GCD | Walker, Grimes, Washington, Austin, Waller | 09/01/03 |
| 2. Brazoria Co. GCD | Brazoria | 09/01/03 |
| 3. Brazos Valley GCD | Robertson, Brazos | 08/31/03 |
| 4. Clear Fork GCD | Fisher | 06/17/05 |
| 5. Cow Creek GCD | Kendall | 09/01/03 |
| 6. Crossroads GCD | Victoria | 09/01/06 |
| 7. Hays Trinity GCD | Hays | 09/01/03 |
| 8. Kimble Co. GCD | Kimble | 09/01/03 |
| 9. Lavaca Co. GCD | Lavaca | 09/01/06 |
| 10. Lone Wolf GCD | Mitchell | 09/01/03 |
| 11. Lost Pines GCD | Bastrop, Lee | 08/31/03 |
| 12. Lower Seymour GCD | Jones | 06/17/05 |
| 13. Mid-East Tex GCD | Freestone, Leon, Madison | 08/31/03 |
| 14. Middle Pecos GCD | Pecos | 09/01/03 |
| 15. Middle Trinity GCD | Callahan, Eastland, Erath, Comanche, Hamilton, Bosque, Coryell, Somervell | 09/01/03 |
| 16. Post Oak GCD | Colorado | 09/01/03 |
| 17. Post Oak Savannah GCD | Milam, Burleson | 08/31/03 |
| 18. Red Sand GCD | Hidalgo | 09/01/03 |
| 19. Southeast Trinity GCD | Comal | 09/01/05 |
| 20. Tri-County GCD | Hardeman, Foard, Wilbarger | 09/01/03 |
| 21. Trinity-Glen Rose GCD | Bexar | 09/01/04 |
| 22. Wes-Tex GCD | Nolan | 09/01/03 |

GROUNDWATER CONSERVATION DISTRICTS

Powers and Responsibilities

- Required (*districts must do.....*)
 - organizational/procedural requirements
 - duties
- Optional (*districts may do.....*)

Powers and Responsibilities

Organizational/procedural requirements

- Operate on a fiscal year with an annual budget, audit accounts
- Hold regular board meeting - at least quarterly, keep minutes of meetings, preserve records
- Register board members and confirm election results with the the TNRCC

Powers and Responsibilities

Required Duties

- Develop and adopt a management plan, coordinate with regional water planning groups and other districts
- Require permits for wells
(except for exempt wells)
- Keep records on water wells
- Make information on groundwater resources available to the TNRCC, TWDB

Powers and Responsibilities

Optional

- Adopt rules to conserve, protect, recharge and prevent waste of groundwater
- Regulate the spacing and production of wells
- Enforce rules
- Acquire land, construct dams, install pumps and equipment for groundwater recharge
- Purchase, sell, transport and distribute surface and groundwater

Powers and Responsibilities

Optional (continued)

- Exercise eminent domain to acquire property necessary for the exercise of authorized duties
- Carry out research projects
- Levy taxes, set fees
(as authorized in enabling legislation)
- Issue bonds
- Regulate the transfer of water out of district

Permitting of Wells

Wells exempt from permit requirements

- Domestic and/or livestock wells
 - on tracks larger than 10 acres
 - incapable of producing more than 25,000 gallons per day

Permitting of Wells

Wells exempt from permit requirements

- Wells providing water for mining, oil and gas exploration/operations
 - with permits from the Railroad Commission
 - unless well production is in excess of mining requirements

Permitting of Wells

Wells exempt from permit requirements

- Any other type of well exempted by the district
 - must apply to all similar wells in the district

Transfer of Groundwater out of the District

- May require permits for water transfers
- Districts are to consider:
 - groundwater availability
 - effects of proposed transfer on groundwater supply and existing permit holders
 - implications to the regional water plan and district's management plan

Transfer of Groundwater out of the District

- Transfer permits may not be more restrictive than requirements for in-district users
- A 50% export surcharge may be imposed in addition to the production fee

GROUNDWATER CONSERVATION DISTRICTS

Financing of Districts

- May be through a property tax and/or production fees
- Enabling legislation often specifies:
 - financing method
 - tax, production caps or rates

Financing of Districts

Unless specified in enabling legislation

- tax rate capped at \$0.50 per \$100 valuation
(note: only 2 districts have rates above \$0.10)
- Production rate capped at:
 - \$1 per acre-foot/year for agricultural use
 - \$10 per acre-foot/year for other uses

Financing of Districts

Fees for Administrative Services

Permit and other fees must not

*"reasonably exceed the cost of
providing these services"*

GROUNDWATER CONSERVATION DISTRICTS "Special Districts"

Legislature can give special powers to districts to address specific water problems

GROUNDWATER CONSERVATION DISTRICTS

"Special Districts"

- Harris-Galveston Subsidence District (1975)
- Ft. Bend Subsidence District (1989)
- Edwards Aquifer Authority (1993)

Creation of Groundwater Conservation Districts

- Action of the Legislature
- Petition by Property Owners
- Initiation by the TNRCC priority groundwater management areas
- Adding territory to an Existing District

Groundwater Conservation Districts

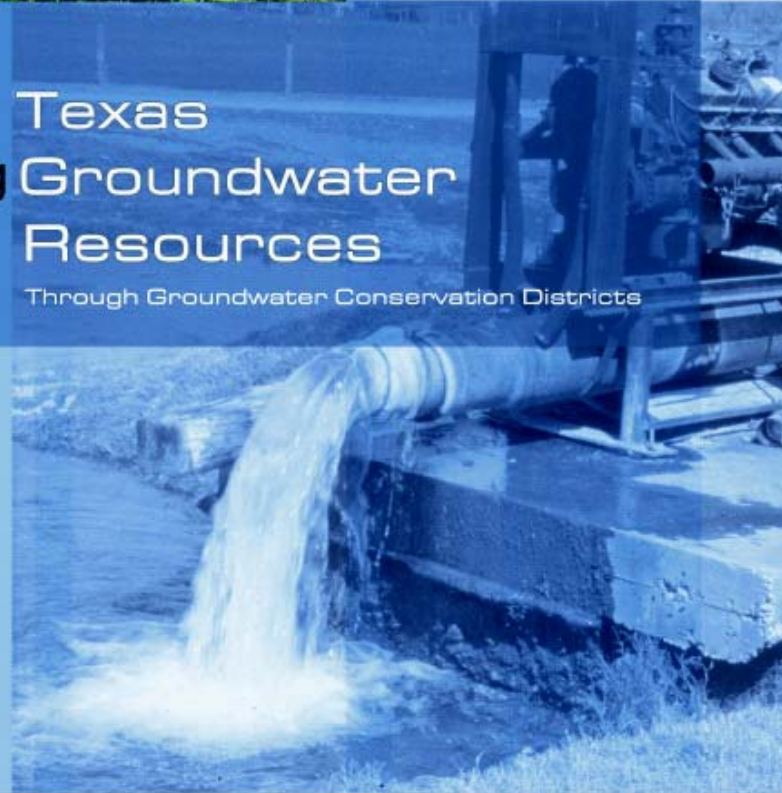
Based on the philosophy of

- *local management of groundwater resources*
- *through groundwater conservation districts*



Texas Managing Groundwater Resources

Through Groundwater Conservation Districts



Groundwater Conservation Districts

For more information:

- *Managing Texas' Groundwater Resources through Groundwater Conservation Districts*

Texas Cooperative Extension Publication

- currently being revised, completion date 3/02,
- posted at <http://gfipps.tamu.edu>

- **Texas Water Development Board's Website**

on state water plan, water projections, etc....

<http://www.twdb.state.tx.us/>

Groundwater Conservation Districts

For more information:

This presentation will be posted on
my website:

<http://gfipps.tamu.edu>