



Groundwater Management During Drought

**CLE International - Texas Water Law
Sharing Water Resources
April 10, 2015 – La Cantera Hill
Country Resort – San Antonio**

Presented by:

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Drought Management in Texas

- Drought is a reality in Texas as our current circumstances and weather pattern show
- A significant amount of the water planning efforts in Texas are aimed at conserving and managing our water supplies during a time of drought

Role of GCDs in Drought Management

- Groundwater conservation districts (GCDs) are an integral part of the water planning framework in Texas
- Section 36.0015 of the Texas Water Code states that GCDs “are the state’s preferred method of groundwater management through rules developed, adopted, and promulgated by a district”

Groundwater Conservation Districts

- | | | | |
|----|---|----|---|
| 1 | High Plains UWCD No. 1 - 9/29/1951 | 53 | Fayette County GCD - 11/6/2001 |
| 2 | North Plains GCD - 1/2/1955 | 54 | Goliad County GCD - 11/6/2001 |
| 3 | Panhandle GCD - 1/21/1956 | 55 | Lone Star GCD - 11/6/2001 |
| 4 | Hudspeth County UWCD No. 1 - 10/5/1957 | 56 | McMullen GCD - 11/6/2001 |
| 5 | Real-Edwards C and R District - 5/30/1959 | 57 | Neches & Trinity Valleys GCD -11/6/2001 |
| 6 | Evergreen UWCD -8/30/1965 | 58 | Pecan Valley GCD - 11/6/2001 |
| 7 | Plateau UWC and Supply District - 3/4/1974 | 59 | Pineywoods GCD - 11/6/2001 |
| 8 | Harris-Galveston Subsidence District- 4/23/1975 | 60 | Refugio GCD - 11/6/2001 |
| 9 | Glasscock GCD - 8/22/1981 | 61 | Texana GCD - 11/6/2001 |
| 10 | Hickory UWCD No. 1 - 8/14/1982 | 62 | Kinney County GCD - 1/12/2002 |
| 11 | Irion County WCD - 8/2/1985 | 63 | Lone Wolf GCD - 2/2/2002 |
| 12 | Permian Basin UWCD - 9/21/1985 | 64 | Kimble County GCD - 5/3/2002 |
| 13 | Fox Crossing Water District - 4/4/1986 | 65 | Middle Trinity GCD - 5/4/2002 |
| 14 | Sutton County UWCD - 4/5/1986 | 66 | Bluebonnet GCD - 11/5/2002 |
| 15 | Coke County UWCD - 11/4/1986 | 67 | Brazos Valley GCD - 11/5/2002 |
| 16 | Mesquite GCD - 11/4/1986 | 68 | Clear Fork GCD - 11/5/2002 |
| 17 | Hill Country UWCD - 8/8/1987 | 69 | Cow Creek GCD - 11/5/2002 |
| 18 | Barton Springs/Edwards Aquifer CD - 8/13/1987 | 70 | Lost Pines GCD - 11/5/2002 |
| 19 | Anderson County UWCD - 10/17/1987 | 71 | Mid-East Texas GCD - 11/5/2002 |
| 20 | Lipan-Kickapoo WCD - 11/3/1987 | 72 | Middle Pecos GCD - 11/5/2002 |
| 21 | Sterling County UWCD - 11/3/1987 | 73 | Post Oak Savannah GCD - 11/5/2002 |
| 22 | Santa Rita UWCD - 8/19/1989 | 74 | Red Sands GCD - 11/5/2002 |
| 23 | Fort Bend Subsidence District - 8/28/1989 | 75 | Trinity Glen Rose GCD - 11/5/2002 |
| 24 | Bandera County RA & GWD - 11/7/1989 | 76 | Wes-Tex GCD - 11/5/2002 |
| 25 | Live Oak UWCD - 11/7/1989 | 77 | Gateway GCD - 5/3/2003 |
| 26 | Sandy Land UWCD - 11/7/1989 | 78 | Hays Trinity GCD - 5/3/2003 |
| 27 | Saratoga UWCD - 11/7/1989 | 79 | Rusk County GCD - 6/5/2004 |
| 28 | Mesa UWCD - 1/20/1990 | 80 | Kenedy County GCD - 11/2/2004 |
| 29 | Crockett County GCD - 1/26/1991 | 81 | Southeast Texas GCD - 11/2/2004 |
| 30 | Medina County GCD - 8/26/1991 | 82 | Corpus Christi ASRCD - 6/17/2005 |
| 31 | Headwaters UWCD - 11/5/1991 | 83 | Victoria County GCD - 8/5/2005 |
| 32 | South Plains UWCD - 2/8/1992 | 84 | Central Texas GCD - 9/24/2005 |
| 33 | Plum Creek CD - 5/1/1993 | 85 | Brazoria County GCD - 11/8/2005 |
| 34 | Uvalde County UWCD - 9/1/1993 | 86 | Lower Trinity GCD - 11/7/2006 |
| 35 | Jeff Davis County UWCD - 11/2/1993 | 87 | San Patricio County GCD - 5/12/2007 |
| 36 | Gonzales County UWCD - 11/2/1994 | 88 | Northern Trinity GCD - 5/15/2007 |
| 37 | Edwards Aquifer Authority - 7/28/1996 | 89 | Colorado County GCD - 11/6/2007 |
| 38 | Garza County UWCD - 11/5/1996 | 90 | Panola County GCD - 11/6/2007 |
| 39 | Hemphill County UWCD - 11/4/1997 | 91 | Starr County GCD - 11/6/2007 |
| 40 | Wintergarden GCD - 1/17/1998 | 92 | Upper Trinity GCD - 11/6/2007 |
| 41 | Culberson County GCD - 5/2/1998 | 93 | Southern Trinity GCD - 6/19/2009 |
| 42 | Llano Estacado UWCD - 11/3/1998 | 94 | Duval County GCD - 7/25/2009 |
| 43 | Rolling Plains GCD - 1/26/1999 | 95 | Priarlands GCD - 9/1/2009 |
| 44 | Menard County UWCD - 8/14/1999 | 96 | Red River GCD - 9/1/2009 |
| 45 | Clearwater UWCD - 8/21/1999 | 97 | Brush County GCD - 11/3/2009 |
| 46 | Presidio County UWCD - 8/31/1999 | 98 | North Texas GCD - 12/1/2009 |
| 47 | Guadalupe County GCD - 11/14/1999 | 99 | Terrell County GCD - 11/6/2012 |
| 48 | Bee GCD - 1/20/2001 | | |
| 49 | Blanco-Pedernales GCD - 1/23/2001 | | |
| 50 | Brewster County GCD - 11/6/2001 | | |
| 51 | Coastal Bend GCD - 11/6/2001 | | |
| 52 | Coastal Plains GCD - 11/6/2001 | | |
- Pending Confirmation**
- | |
|-------------------------|
| A - Calhoun County GCD |
| B - Deep East Texas GCD |

Pending Confirmation

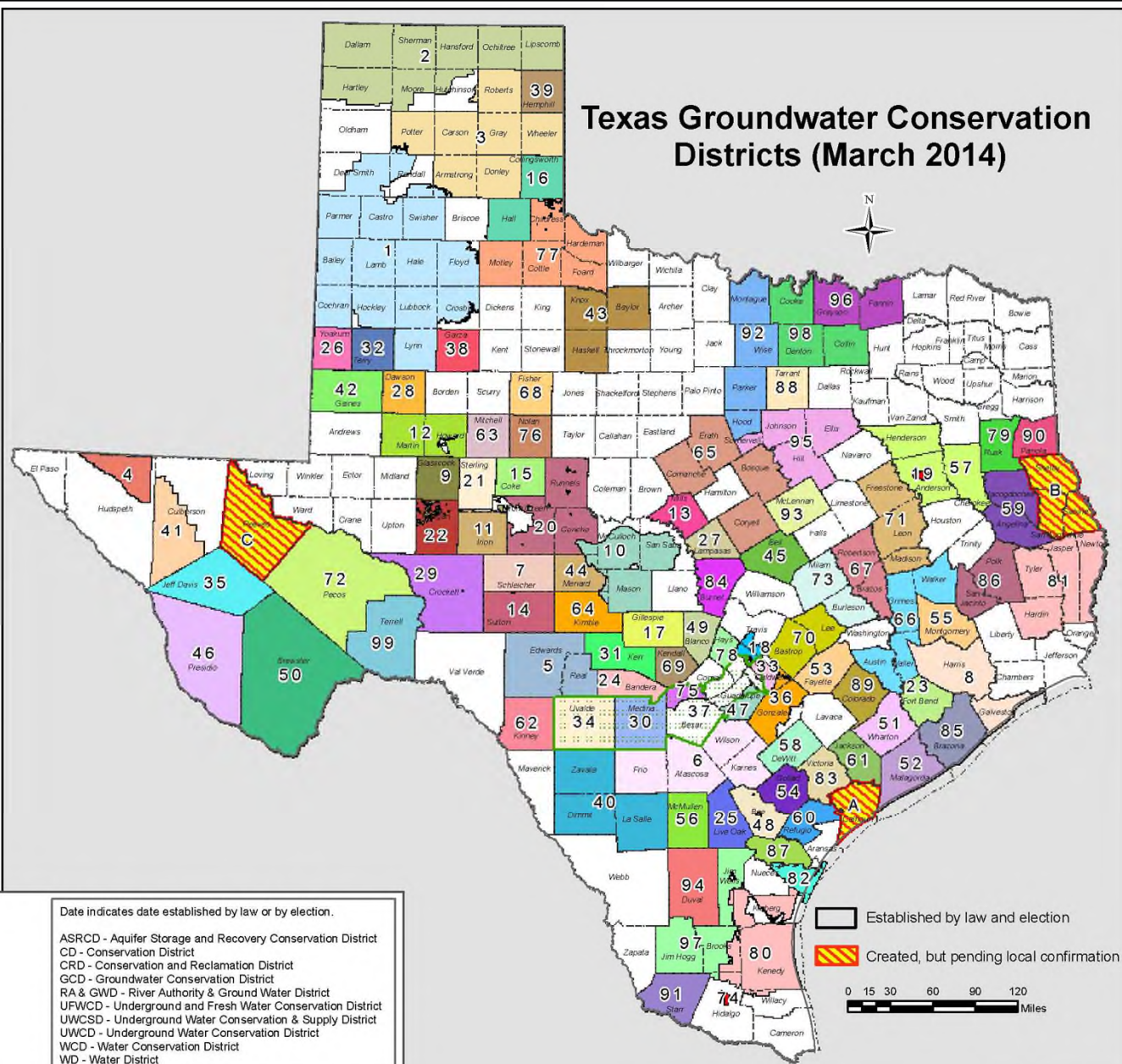
- A - Calhoun County GCD
B - Deep East Texas GCD
C - Reeves County GCD

Texas Commission on Environmental Quality



This map was prepared by the TCEQ for display purposes only. No claims are made to the accuracy or completeness of the information shown herein nor is this map suitable for any other use. The scale and location of mapped data are approximate. The groundwater conservation district boundaries are not land survey data and may not accurately depict legal descriptions. For more information about this map, please contact TCEQ - Water Supply Division, Groundwater Planning & Assessment Team at (512) 239-4691.

Map printed March 3, 2014.



Date indicates date established by law or by election.

ASRCD - Aquifer Storage and Recovery Conservation District
CD - Conservation District
CRD - Conservation and Reclamation District
GCD - Groundwater Conservation District
RA & GWD - River Authority & Ground Water District
UFWCD - Underground and Fresh Water Conservation District
UWCD - Underground Water Conservation & Supply District
UWCD - Underground Water Conservation District
WCD - Water Conservation District
WD - Water District

☐ Established by law and election

 Created, but pending local confirmation

0 15 30 60 90 120 Miles

Texas Groundwater Management / Law

- Exciting time to be involved with water issues in Texas
- Water management and Texas law governing water is evolving and organic
- 1997 – 38 GCDs in existence
- 2013 – 99 GCDs with 3 GCDs awaiting confirmation elections

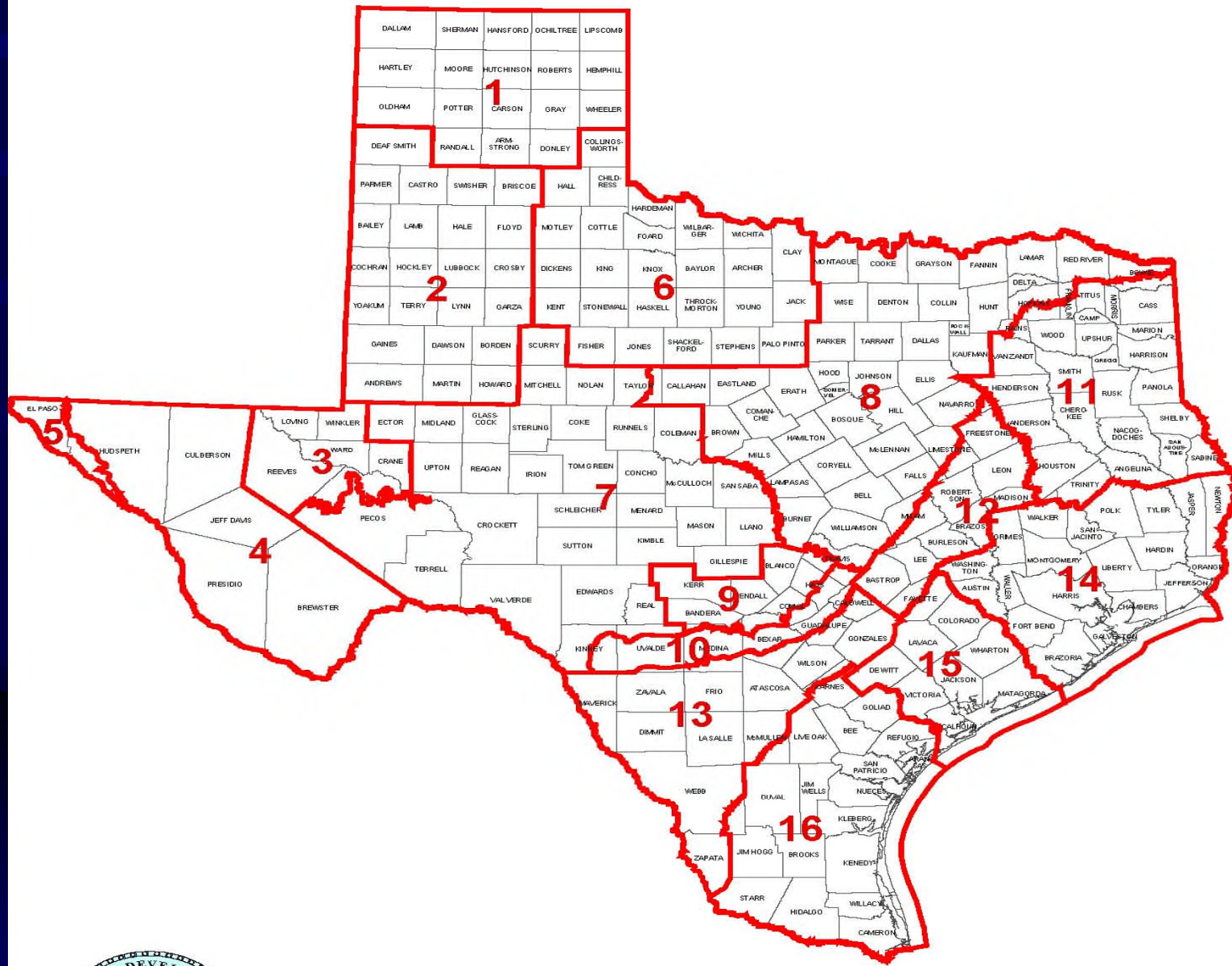
Texas Groundwater Management / Law

- Increased level of knowledge about groundwater resources and management but much more is needed
 - Ex. Middle Trinity GCD (Erath, Comanche, Bosque, and Coryell Counties)
- Science, science, science

House Bill 1763 – Joint Planning Process through GMAs

- House Bill 1763 - 2005
 - Placed requirements and emphasis on joint planning by GCDs through Groundwater Management Areas (GMAs).
 - Established Desired Future Conditions (DFCs) for major and minor aquifers for next 50 years.
- Managed Available Groundwater (MAG)
 - GCDs were required under Section 36.1132 to issue permits up to the MAG

Groundwater Management Areas in Texas

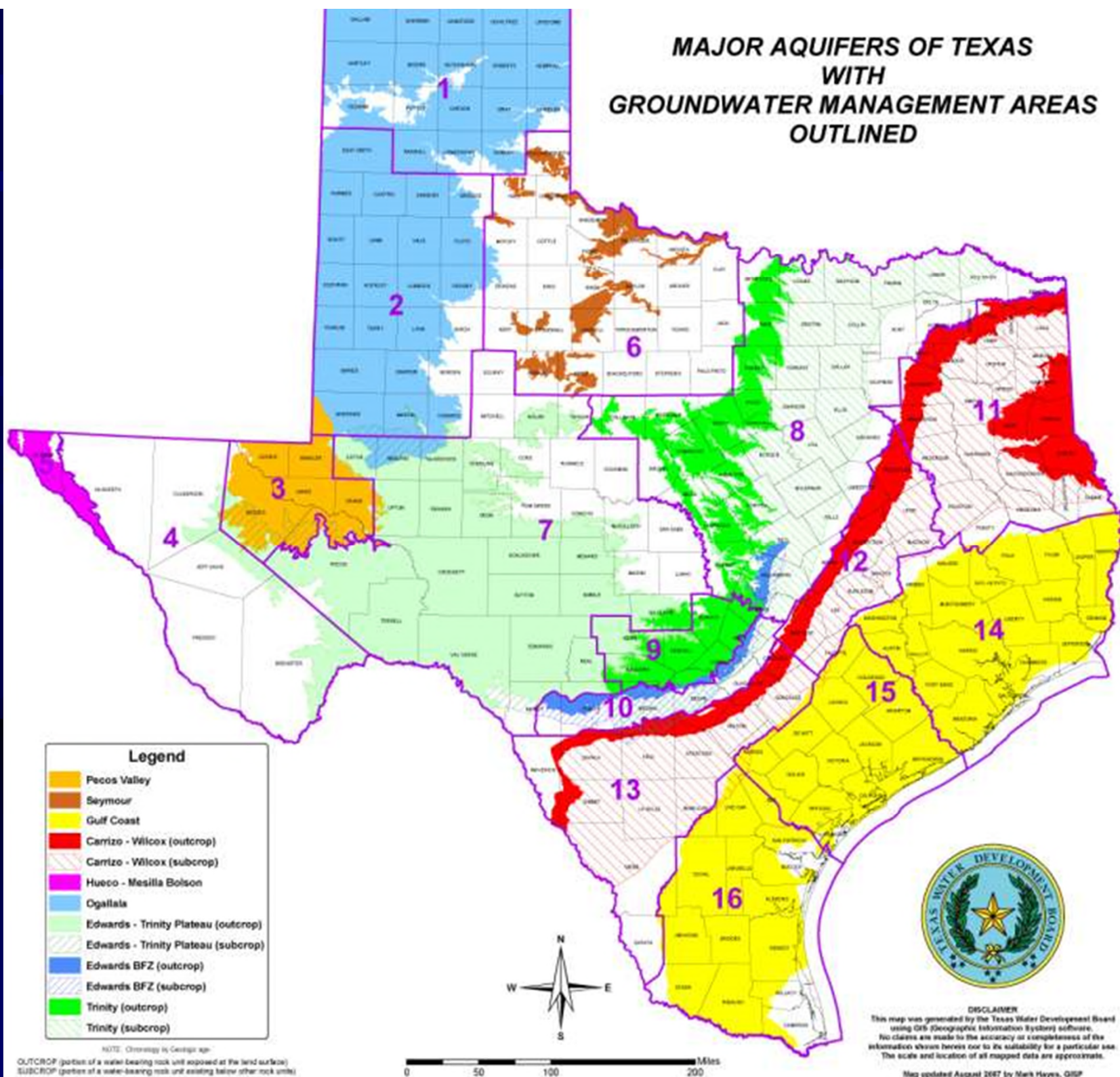


0 25 50 100 150 200 Miles

DISCLAIMER
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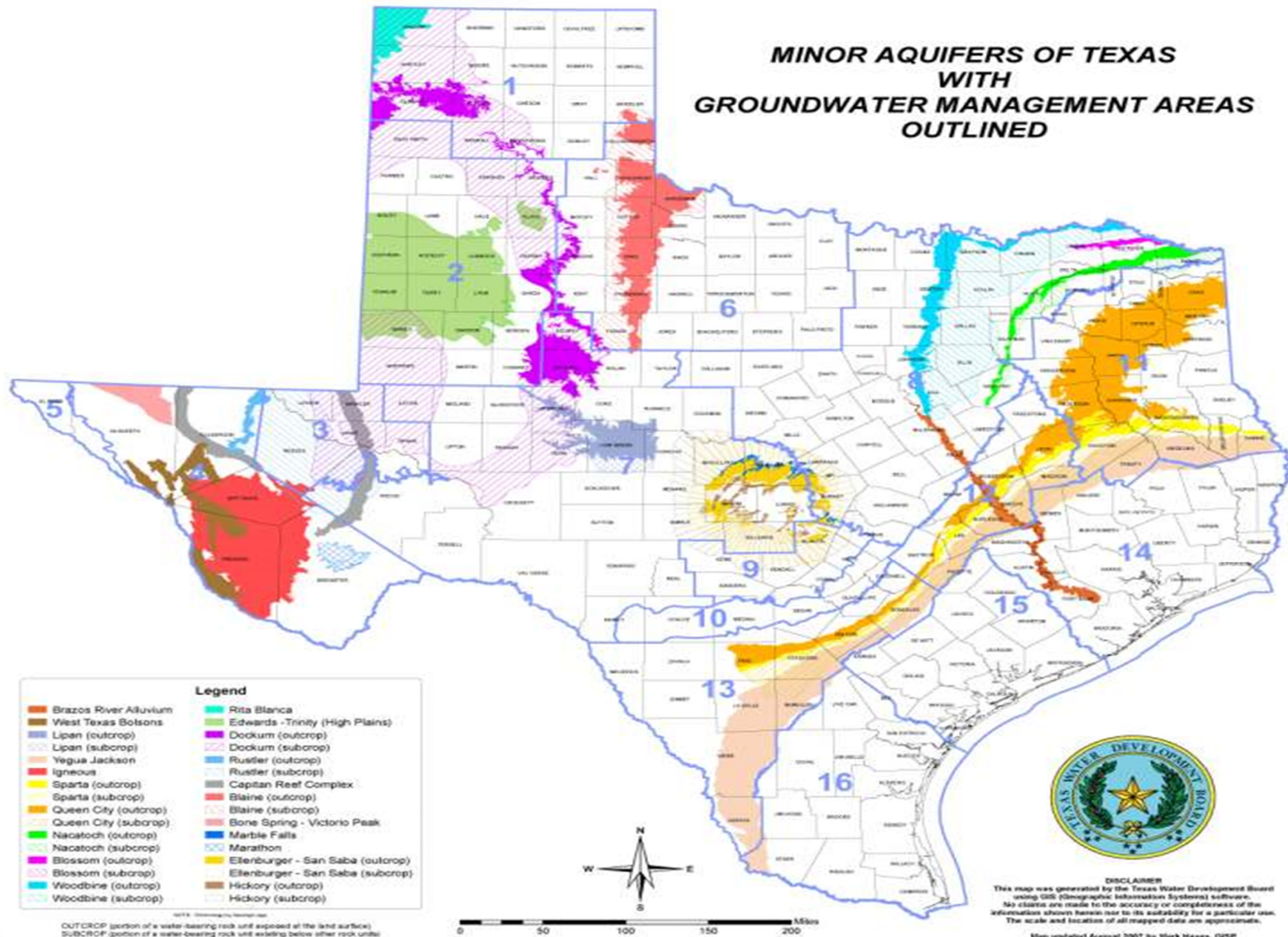
November 2002 - by Mark Hayes, GIS section

MAJOR AQUIFERS OF TEXAS WITH GROUNDWATER MANAGEMENT AREAS OUTLINED



NOTE: Chronology is Geologic age.
OUTCROP (portion of a water-bearing rock unit exposed at the land surface)
SUBCROP (portion of a water-bearing rock unit existing below other rock units)

MINOR AQUIFERS OF TEXAS WITH GROUNDWATER MANAGEMENT AREAS OUTLINED



SB 737 in 2011 – Shift in GMA Planning Goals

- In enacting SB 737 in 2011, Texas Legislature shifted focus in groundwater management from MAG number to DFCs.
- Section 36.1132 was revised to require GCDs to take into consideration multiple factors in managing groundwater production to achieve a DFC for an aquifer, including but not limited to the modeled available groundwater (MAG) number.

Chapter 36 is a Tool Box

- Chapter 36 can be viewed as a tool box that provides GCDs with the tools they need to manage the groundwater resources on a local level to address local groundwater uses and conditions.

Chapter 36 – Protection of Historic and Existing Groundwater Use

- Section 36.113(e) – A GCD may impose more restrictive permit conditions on new permit applications and permit amendment applications to increase use by historic users.
- Section 36.116 (b) – In promulgating rules limiting groundwater production, a GCD may preserve historic or existing use to the maximum extent practicable.

Typical GCD Permitting Structure

- Historic Use / Grandfather Permits
- Operating Permits
- Exempt Groundwater Users / Well Registrants
- Proportional reductions in groundwater use based on groundwater conditions, such as drought

Management Zones

- Section 36.116(d) authorizes GCDs to adopt different rules and create “management zones” to enable GCDs to manage groundwater use in specific areas different than other areas within a GCD.
- Management Zones – can be delineated based on aquifers or geographic areas overlying an aquifer.

Drought Contingency Plans

- Some GCDs have adopted Drought Contingency Plans to help the GCDs and the areas within the GCDs proactively address drought conditions.
- Different stages / phase of DCPs with certain actions required at each stage / phase.
- Initial phases usually have voluntary actions.
- Sample triggers for different stages of DCPs
 - Precipitation Deficit Index (PDI)
 - Palmer Drought Severity Index (PDSI)

Factors Impacting Groundwater Management

- Edwards Aquifer Authority v. Day Decision –
 - Groundwater ownership in place subject to regulation of a GCD.
 - Fair share of groundwater.
- Possible Legislative Changes –
 - HB 2647 – limitation on authority of GCDs to curtail groundwater production from wells used for power generation or mining.
 - ASR Legislation – HB 655 / SB 1903
 - Brackish Groundwater Production – HB 30

Questions?

- Any questions?
- Thank you.