

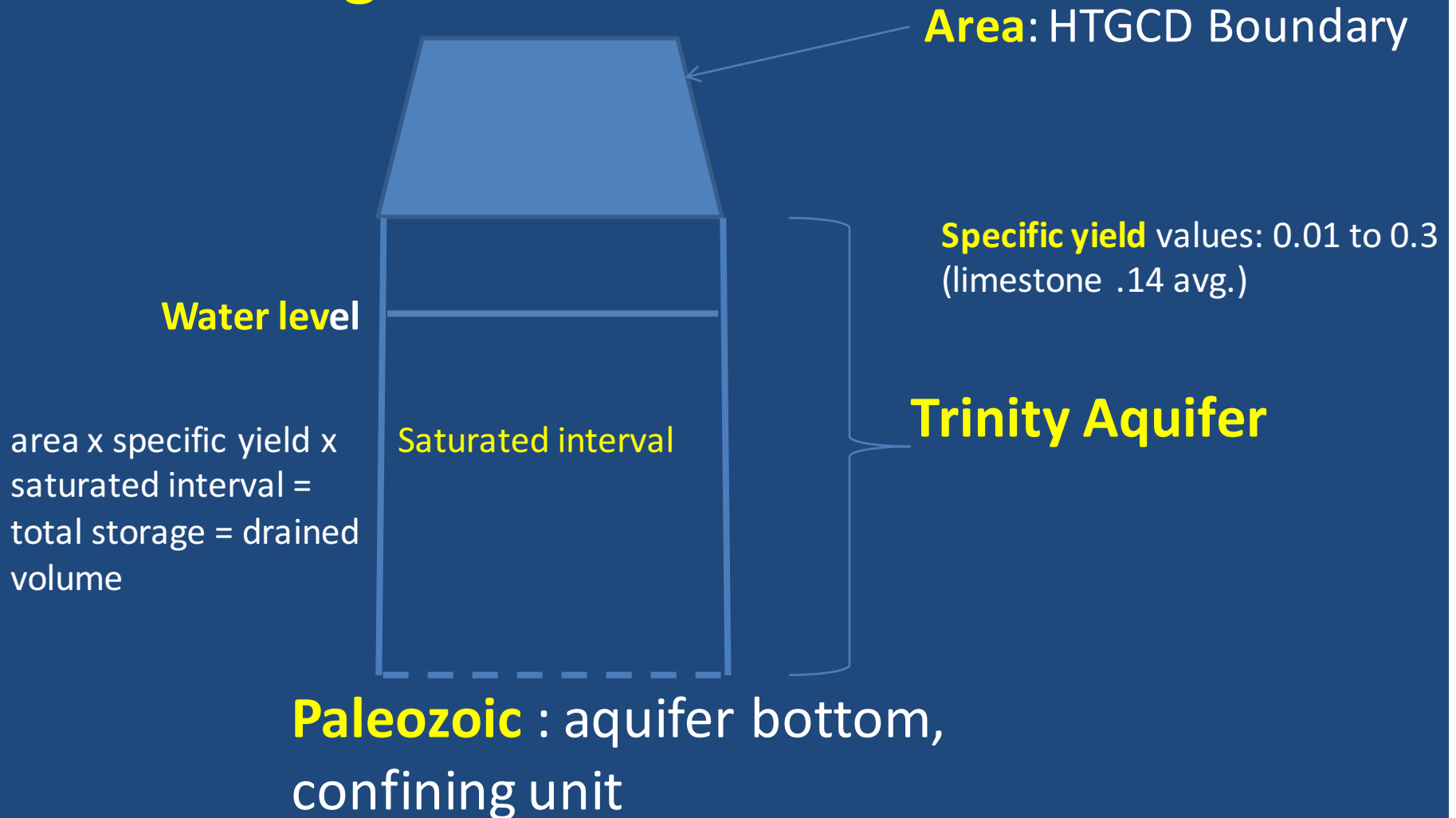
Total Estimated Recoverable Storage - TERS for Aquifers in GMA 9

- **Texas Water Code** (2011): “before voting on their proposed DFC for a relevant aquifer within a groundwater management area, the groundwater conservation districts shall consider the total estimated recoverable storage as provided by the executive administrator of the TWDB”
- **TERS Calculation**: Total Storage; Total Estimated Recoverable Storage

Definitions

- **Total Storage**: the volume of groundwater that can be released by completely draining the aquifer. Data required for calculation: area, water level - aquifer bottom (saturated thickness), and aquifer storage properties (specific yield for unconfined aquifers)
- **HTGCD Trinity Aquifer**: total district area; average water level from historical TWDB data base; Paleozoic as aquifer bottom; storage properties from TWDB 2011 GAM (Hutchison) assumes Trinity Aquifer unconfined

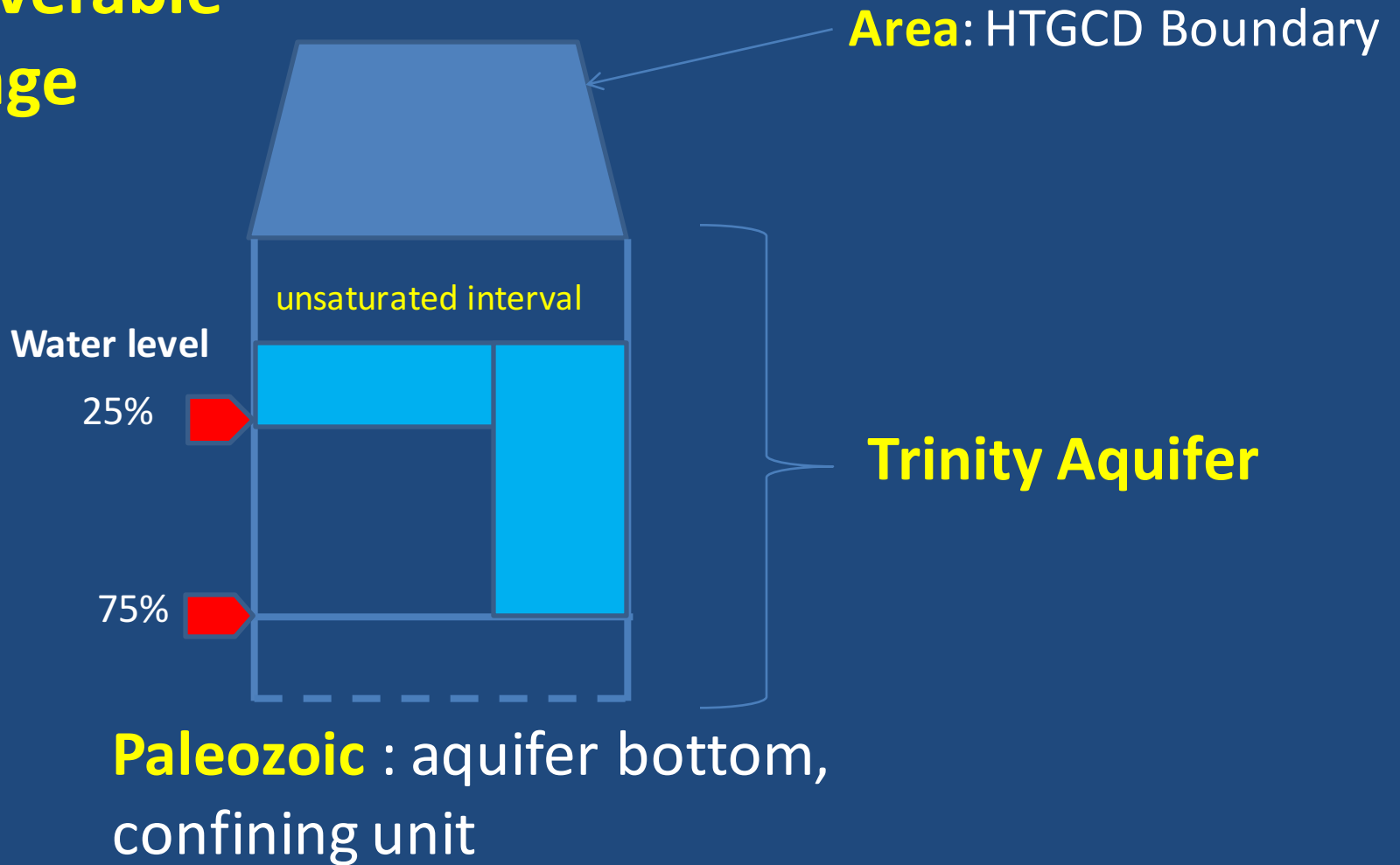
Total Storage



Definitions

- **Total Estimated Recoverable Storage** – TERS: “the estimated amount of groundwater within an aquifer that accounts for recovery scenarios that range between 25 and 75% of the porosity-adjusted aquifer volume; assume that between 25 and 75% of groundwater held within an aquifer can be removed by pumping” (Texas Administrative Code, 2011)

Total Estimated Recoverable Storage



Hill Country Trinity Aquifer – HTGCD

- **Total storage** calculated at: **550,000 acre feet**
- **Total Estimated Recoverable Storage:**
 - 25% of total storage: **137,500 acre feet**
 - 75% of total storage: **412,000 acre feet**
- **DFC** : 30' average regional drawdown -50 years
(less than 20' in HTGCD) : **9,100 acre feet/year**

Concerns

- The TERS values for the Trinity Aquifer in HTGCD, as stated in the TWDB Report, are best used for regional studies. Volumetric analyses without local control are controversial.
- The averaged values used for saturated thicknesses and specific yield are not representative of the rapid lithofacies changes in the Trinity section.
- No consideration is given to producibility. How long would it take to produce (drain) the TERS? Close spacing required to recover that volume of water in low flow-rates normally seen in Hays County would not be practical.
- Method does not distinguish water quality or changes to surface water - groundwater interaction caused by pumping.

More Concerns

- **Hickory Aquifer (Paleozoic):** Unit is projected south of Blanco County into northwest corner of Hays County subsurface. Total storage of **58,000 acre feet** assigned to District.
- **San Antonio segment of the Edwards (BFZ) Aquifer:** minor fraction of aquifer within HTGCD along irregular eastern boundary. **4,500 acre feet** of total storage assigned to District.
- No action required by HTGCD.

CONCLUSIONS

- HTGCD to consider Trinity Aquifer TERS values for next DFC calculation.
- Until reliable model available for Trinity using local data base, use TERS with **caution**.
- “The volume of water contained in ... an aquifer is of interest, of more concern is how much water can be released from storage”
Driscoll, 1986