Texas Groundwater Marketing and Exporting

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Key Points
- Texas Water Issues
- Texas Water—Sources & Uses Trends
- History of Water Transfers
- Drivers for Groundwater Transfers
- Role of Groundwater Conservation Districts in Transfers
- Groundwater Marketing – Texas Style
- Trends

Texas Water Issues
- Providing Water to Cities
  - 10% shortage today
  - 43% shortage 2050 (900 cities)
- Drought Options for Cities
- Interbasin Transfers—junior rights
- New Reservoirs: cost & consequences
- Environmental Water Needs
- Desalination: where, cost & who pays
- Funding Needed ($17 Billion)
- Conservation
- Groundwater Transfers

Texas Water Sources/Uses

Comparison of surface and ground water supplies.

Comparison of ground water used to supply the different components of the demand.
Texas Water Uses and Sources

Users by Source

- Groundwater (9.4 maf/57%)
  - Agriculture 80%
  - Municipal 15%
  - Other 5%
- Surface Water (7.1 maf/43%)
  - Agriculture 35%
  - Municipal/Industrial 65%

Groundwater as a Source of Water Supply

WATER USE BY AQUIFER

<table>
<thead>
<tr>
<th>AQUIFER</th>
<th>Estimated Pumping</th>
<th>Estimated Recharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ogallala</td>
<td>6,200,000 AF</td>
<td>300,000 AF</td>
</tr>
<tr>
<td>Edwards</td>
<td>730,000 AF</td>
<td>1,200,000 AF</td>
</tr>
<tr>
<td>Carrizo</td>
<td>500,000 AF</td>
<td>615,000 AF</td>
</tr>
<tr>
<td>Trinity</td>
<td>200,000 AF</td>
<td>100,000 AF</td>
</tr>
<tr>
<td>Gulf Coast</td>
<td>1,150,000 AF</td>
<td>1,230,000 AF</td>
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<tr>
<td>Bolsum</td>
<td>400,000 AF</td>
<td>430,000 AF</td>
</tr>
<tr>
<td>All Others</td>
<td>220,000 AF</td>
<td>200,000 AF</td>
</tr>
<tr>
<td>TOTAL</td>
<td>9,400,000 AF</td>
<td>4,100,000 AF</td>
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</tbody>
</table>

Water Transfers/Markets

* What is it?
* Long History in Texas
* Accepted Practice

Groundwater Marketing

What is it:
* Transfer of water/rights between willing seller (landowner) and buyer.

Transaction Forms:
* Lease, sale of right, sale of water, land purchase, cooperative.

Exporting:
* Transfer of water off property, outside of county, aquifer, or groundwater conservation district.
Drivers for Groundwater Marketing

- Urban Population Growth
- Limited Surface Water Supplies
- Drought Shortages & Cities
- Some Aquifers Drought Resistant
- Inexpensive Water for Cities
- $ for Landowners and Agriculture
- Capture Rule
- Limitations of Groundwater Districts
- History & Trends

Population Growth: 2000-2050

Urban Population Growth

Rural to Urban Shift in Texas
Drivers for Groundwater Transfers

- **Drought Protection for Cities**
  - 10% shortage today
  - 43% shortage 2050 (900 cities)

- **Limited Surface Supplies**
  - 12-15 Rivers Fully Appropriated
  - Cost and Opposition ($3.5B—18 Reservoirs)

- **Inexpensive Water**
  - Purchase costs < $100/acre foot
  - Transportation costs: pipeline or bed and banks

- **$ for Landowners /Agriculture**

Drivers for Groundwater Transfers

- **Capture Rule**
  - Landowner freedom to sell private property
  - Little consideration for neighbors or community

- **Limitations of Groundwater Districts**
  - Districts cannot absolutely prohibit
  - Can Restrict Some Exports
  - Must be Fair & Reasonable
  - Same restrictions as on other users
  - Can Charge an Export Fee

- **District Funding**
  - Litigation Expenses
  - Regulations Based on Sound Science is Expensive

Groundwater Marketing Texas Style

- **Long History 1950’s**
- **Transactions Types**
  - Lease of water
  - Sale of water
  - Purchase of land
  - Cooperative’s/Partnerships

- **Transaction format**
  - Two party (city– landowner) but changing
  - GCD Approval for Exporting
  - Water Brokers
  - Public or Private Reviews

Presented at Landowner and Citizen Information on Groundwater Leasing, Marketing and Sales on April 1, 2004
More on Marketing

- Agriculture (rural) to Urban
- Where
  - West Texas—El Paso
  - Central Texas - - San Antonio, Corpus Christi
  - Mid sized & smaller cities
  - Edwards Aquifer
  - Carrizo Wilcox Aquifer
- Examples
  - Kinney County
  - El Paso Water Ranch
  - San Antonio/ Alcoa/Edwards Aquifer
  - West Texas

Trends for Groundwater Marketing & Exporting

- More pressure on GCD’s to Regulate
  - Rural to Urban Transactions to Continue
  - Reasons
    - Inexpensive water for cities
    - Money for landowners
    - Good water quality
    - Groundwater is hedge against drought
    - Junior rights for surface water
    - Surplus in some aquifers— Gulf Coast, Carrizo

- More public involvement
- More political controversy
- Impacts on rural areas not as clear
  - Panhandle
  - El Paso
  - Central Texas
  - Gulf coast
- Regional or aquifer-wide management
- More legislative involvement

Other Groundwater Issues

- Aquifer over-pumping
  - Well interference
  - Mining
- Aquifer sustainability
- Financing and Budgets of Groundwater Districts
- Impact on Irrigated agriculture
- Impact on Rural Texas
- State Leasing