Status and Trends of Irrigated Agriculture in Texas

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Economic Importance of Irrigation

• Statewide economic value = $4.7 billion (2007)

• Regional Economic Impacts
  – Texas High Plains = $2.2 billion & 7,300 jobs
  – Winter Garden = $77 million & 872 jobs
    • Uvalde County = $44 million & 600 jobs
  – Middle Gulf Coast = $441 million & 3,900 jobs
Recent Headlines

• Texas must limit agricultural water use
  – May 29, 2012 Houston Chronicle article

• Environment Texas calls on Legislature to stop water hogs
  – July 2012 story on KVUE News & other media
Ag irrigation in Texas (1958-2008)

Source: TWDB Report 347 & Irrigation Water Use Estimates
Comparison of annual rates of irrigation application in Texas

Agricultural
• Irrigation varies by crop
  – Corn = 20 inches
  – Sorghum = 10 inches
  – Wheat = 12 inches
  – Rice = 30 inches
  – Cotton = 13 inches
• Statewide mean = 18 inches

Urban lawns and landscapes
• Warm season turf uses 40-60”
• College Station = 22” applied
• No statewide mean available
Groundwater is primary water source for irrigation

Source of water (on irrigated acre basis)

- Groundwater: 86%
- Surface Water: 12%
- Mixed: 2%

Source: TWDB Report 347
Adoption of efficient sprinkler systems
Application Efficiency of Irrigation Systems

- Furrow: 60%
- MESA: 80%
- LESA: 90%
- LEPA: 90%
- SDI: 100%
Irrigation system use in Texas

- Sprinkler systems: 78%
- Furrow: 13%
- Flood: 6%
- Drip, trickle, other: 3%
Increasing yields without increased irrigation

- Corn yields increased by 62% since 1975
- Cotton yields have doubled since 1975
- Improved irrigation technology/management, crop management & crop genetics
Crop yields with & without irrigation (2008-2009)

- Corn (bu)
- Milo (bu)
- Wheat (bu)
- Cotton (lbs)

Irrigated: blue
Nonirrigated: red
Future Challenges

- Declining aquifer levels
  - Projected to decrease by 32% by 2060
- Increasing urbanization/competition for water
  - >80% increase in population by 2060
    - Increasing food demands
    - Decreasing land available for irrigated agriculture
    - Decreasing surface water available for ag irrigation
Current and future water demands
### Projected changes in water demands

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<tr>
<th>Region</th>
<th>Municipal Demand</th>
<th>Irrigation Demand</th>
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<tbody>
<tr>
<td></td>
<td>Acre-feet change from 2010–2060</td>
<td>Percentage change from 2010–2060</td>
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<tr>
<td>A</td>
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<tr>
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Opportunities for Improving Agricultural Irrigation

• Improving Irrigation Scheduling
• Developing Improved Irrigation Water Management Technologies
• Adopting Drought Tolerant Crop Varieties
• Continuing Conservation Practices Adoption
• Improving Irrigation Conveyance Systems
Summary

• Irrigation is important to Texas
• Groundwater = primary source for irrigation
• Irrigation efficiency has increased significantly
• Yields have increased significantly without increased water use
• Challenges ahead due to declining aquifers & urbanization
• Solutions include adoption of new tools, crop varieties and tried and true conservation practices
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Questions?