Texas Land Trends

Texas A&M Institute of Renewable Natural Resources
Roel R. Lopez
Value of Rural Lands

- Rural working lands play an unseen yet critical role in water/food sustainability and national/energy security.

- *Effective* conservation will require innovative solutions to sustaining private rural working lands.

- Presentation Outline:
  - Changes in human demographics
  - Changes in land uses/values
  - Linkage to critical issues – *Water*.

*“Water conservation starts where the first rain drop falls”*
Texas Land Trends – *The Data*

- Trends in land use (1997-2012)
- Primary datasets used
  - County Appraisal District
  - USDA NASS Census of Ag
- Relationships among
  - Land Value
  - Land Ownership
  - Land Use
- *Working Lands* – farms, ranches, family forests, wildlife (e.g., 1D, 1D1)
CHANGING PEOPLE
Changing Texas

171 Million Acres...

5% PUBLIC vs 95% PRIVATE

17% DEVELOPED vs 83% RURAL

...142 Million Acres
Private Working Lands

Population: 26 Million...

= 250,000
= Rural (10%)
= Landowners (<1%)
Texas Population

- 1997 – 19 Million
- 2012 – 26 Million
- 36% increase
- 500,000/year
- 65% of increase occurred within Top Ten Populated Counties
Hill Country Population

- 1997 – 2.4M
- 2012 – 3.3M
- Increase – ~922K
- 38% increase
- 61,529/year
CHANGING...PLACES
Loss of Working Lands: Statewide

- 1997 – 143.4 Million acres
- 2012 – 142.3 Million acres
- Loss 1.1 Million acres
Loss of Working Lands: Hill Country

- 1997 – 9.85 Million acres
- 2012 – 9.58 Million acres
- Loss 274K acres
Working Land Loss – *Future*?

Acres (Millions)

143.5
143.0
142.5
142.0

?
Wildlife Management: Statewide

- 1997 – 92K acres
- 2012 – 3.3 Million acres
- Gain of 3.2 Million acres
Wildlife Management: Hill Country

- 1997 – 28K acres
- 2012 – 1M acres
- Gain of ~1M acres
The Good....
Oil and Gas

- **Game Changer**—Texas is leading crude oil production state in part to 3 large shale gas plays
  - Barnett, Haynesville and Eagle Ford
- U.S. oil production expected to exceed that of Saudi Arabia by 2017
- **Eagle Ford Shale Story**
  - $87B in revenue (2014)
  - Since 2014, natural gas production has *doubled* and oil production has increased *6X*.
Oil and Gas
Night Time Illumination

1992

2012

Increase 1993-2012
Oil and Gas – *Eagle Ford Shale*

- Landsat 1993-2014 - CDA
- Estimated increase:
  - 23,000 well pads
  - 84,000 acres
  - 65% of construction occurred 2011-2014
Market Value - *Driver*

Market Value 1997

Market Value 2012

$ Per Acre
- 1 - 1,000
- 1,000 - 2,000
- 2,000 - 3,000
- 3,000 - 4,000
- 4,000 - 5,000
- > 5,000

$ Per Acre
- 1 - 1,000
- 1,000 - 2,000
- 2,000 - 3,000
- 3,000 - 4,000
- 4,000 - 5,000
- > 5,000
Market Value - *Hill Country*

- 1997 – $2,127/Acre
- 2012 – $6,830/Acre
- Gain of $4,703/Acre
Farm and Ranch Proceeds - *Driver*

Net Farm and Ranch Proceeds by Ownership Size, 2012

Economic Loss = Predictor of Land Conversion?
The Ugly....
Ownership Size - Acres

- Ownership size = fragmentation
- Increase (500K acres) of <100 acre farms
- Decrease (4M acres) of 100-2000 acre farms
- Increase (400K acres) of >2000 acre farms

Acres Change By Size Class (1997-2012)
Ownership Size (Acres) - *Hill Country*

**Acres Change By Size Class (1997-2012)**

- **1-100 Acres:** 78,071
- **100-500 Acres:** -66,315
- **500-1,000 Acres:** -160,060
- **1,000-2,000 Acres:** -162,911
- **2,000+ Acres:** -584,002
Ownership Size – *Number*

**1997-2012**

<table>
<thead>
<tr>
<th>Size Class</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-100</td>
<td>25,790</td>
</tr>
<tr>
<td>100-500</td>
<td>-1,927</td>
</tr>
<tr>
<td>500-1000</td>
<td>-2,204</td>
</tr>
<tr>
<td>1000-2000</td>
<td>-1,236</td>
</tr>
<tr>
<td>2000+</td>
<td>213</td>
</tr>
</tbody>
</table>
Ownership Size – *Hill Country*

<table>
<thead>
<tr>
<th>Size Class</th>
<th>Number of Farms and Ranches</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-100</td>
<td>2,483</td>
</tr>
<tr>
<td>100-500</td>
<td>-58</td>
</tr>
<tr>
<td>500-1,000</td>
<td>-216</td>
</tr>
<tr>
<td>1,000-2,000</td>
<td>-100</td>
</tr>
<tr>
<td>2,000+</td>
<td>-126</td>
</tr>
</tbody>
</table>

**1997-2012**
Ownership Size – Distribution

Proportion of Farms <500 Acres in Size 2012

Proportion of Farms >2,000 Acres in Size 2012
WATER-LAND CONNECTION
Why “Land” Matters?

“Water conservation starts where the first rain drop falls”.

-President Lyndon B. Johnson
Water Demand and State Plan

- State water plan expected to generate 9 million acre-feet/year
- Implementation Costs = $53 billion – Up from $30.7 billion in 2007

- Water use today - 18 MAF
- Water use by 2060 - 22 MAF
- Cities need more water
Water Conservation

“Water conservation starts where the first rain drop falls”.

- President Lyndon B. Johnson
Land Conservation as Water Strategy?

- Should we consider the value of land conservation as a viable, cost-effective water strategy?
- Is “Land Infrastructure” as important as city infrastructure?
- Strategy in State Water Plan?

“Yesterday is not ours to recover, but tomorrow is ours to win or lose”.

- President Lyndon B. Johnson

44K ac-ft annually
CHANGING...PERSPECTIVES
Role of Private Landowners?

- Private lands in the U.S. undergoing significant changes (e.g., >1 acre of farmland lost/minute).
- Most lands in U.S. are privately-owned (64%) and play an unseen yet critical role in water/food sustainability and national/energy security.
- Effective conservation will require engagement with private landowners.
- Challenges with Changing Perspectives and Landowner demographics.
The Data...
Family Forests by the Numbers

East Texas
- Acres: 6,107,000
- Ownerships: 75,000
- Average size: 81.4 ac
- Owners: 160,000

West Texas
- Acres: 35,983,000
- Ownerships: 292,000
- Average size: 123.4 ac
- Owners: 498,000
Landowner Demographics

- In 2007, the average farmer – 57 years old; average forest landowners – 65 years old.
- During the next two decades, the U.S. will witness the largest intergenerational transfer of rural lands in its history.
Landowner Demographics

- Future private landowner?
- Younger generation less tied to the land.
- Concerns - estate taxes on holdings
- Buyers/developers who want to make a better return on their investments than farming or ranching can provide.
Landowner Demographics

- Absentee ownerships – 45% of ownerships
- Part of farm – 42% of ownerships
- New ownerships (<10 yrs) – 25% of ownerships
Size of Family Land Holdings in Texas

- 10-49: 60%
- 50-99: 20%
- 100-499: 10%
- 500+: 0%
Reasons for Owning Land – East Texas

Bar chart showing the reasons for owning land in East Texas. The reasons are listed from left to right: Legacy, Beauty, Nature, Investment, Water, Wildlife, Home, Family, Farm, Privacy, Timber, Recreation, Hunting, Cabin, Firewood. The bars indicate the percentage of people who choose each reason, with Legacy being the highest at approximately 90% and Firewood being the lowest.
Landowner Average Age

2012

Average Age
- 50 - 54
- 55 - 59
- 60 - 64
- 65
Operator Years on Current Operation

2012

Average Years
- <17
- 18 - 20
- 21 - 23
- >23
Absentee Operators (Ratio)

2012

Operators
- <0.25
- 0.26 - 0.50
- 0.51 - 0.75
- >0.75
Absence vs. Resident Landowners

1997
- 38% Resident Landowners
- 62% Absentee Landowners

2002
- 33% Resident Landowners
- 67% Absentee Landowners

2007
- 32% Resident Landowners
- 68% Absentee Landowners

2012
- 31% Resident Landowners
- 69% Absentee Landowners

Number of Operators

Resident Landowners

- 1997: 62%
- 2002: 67%
- 2007: 68%
- 2012: 69%
Female Operators (Ratio)

2012

Proportion
- <0.05
- 0.06 - 0.10
- 0.11 - 0.15
- >0.15
- No Data
Minority Operators (Ratio)
## Landowner Ethnicity (Number of Operators)

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>2007</th>
<th>2012</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>6,124</td>
<td>8,551</td>
<td>39.6%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>20,351</td>
<td>23,689</td>
<td>16.4%</td>
</tr>
<tr>
<td>White</td>
<td>236,568</td>
<td>235,449</td>
<td>-0.5%</td>
</tr>
<tr>
<td>Other</td>
<td>4,686</td>
<td>4,782</td>
<td>2.0%</td>
</tr>
</tbody>
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# Landowner Ethnicity (Number of Acres)

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<th>2012</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>African American</td>
<td>561,693</td>
<td>900,870</td>
<td>60.4%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>5,142,720</td>
<td>6,612,971</td>
<td>28.6%</td>
</tr>
<tr>
<td>White</td>
<td>104,554,595</td>
<td>112,741,530</td>
<td>7.8%</td>
</tr>
<tr>
<td>Other</td>
<td>733,251</td>
<td>694,266</td>
<td>-5.3%</td>
</tr>
</tbody>
</table>
The Challenge...

- **Rapid Change in Rural Landscapes.** How do we maintain rural lands with increasing human population?

- **Different Actors – Landowners and Urban Texas.** How do we engage broader audience?

- **Game Changers – Water, T&E, and Energy.** How do we balance demands? How do we take these challenges and create opportunities?
The Grand Challenges...

- **Changing Places** – Loss of working lands, fragmentation and conversion.
- **Changing Perspectives** – Aging landowners, different objectives, largest intergenerational transfer.
- **Changing People** – Increasing human population, shifts in ethnicity and urban residents.
Promoting Private Lands Stewardship through Research, Education, and Policy.

http://irnr.tamu.edu/
http://txlandtrends.org/

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