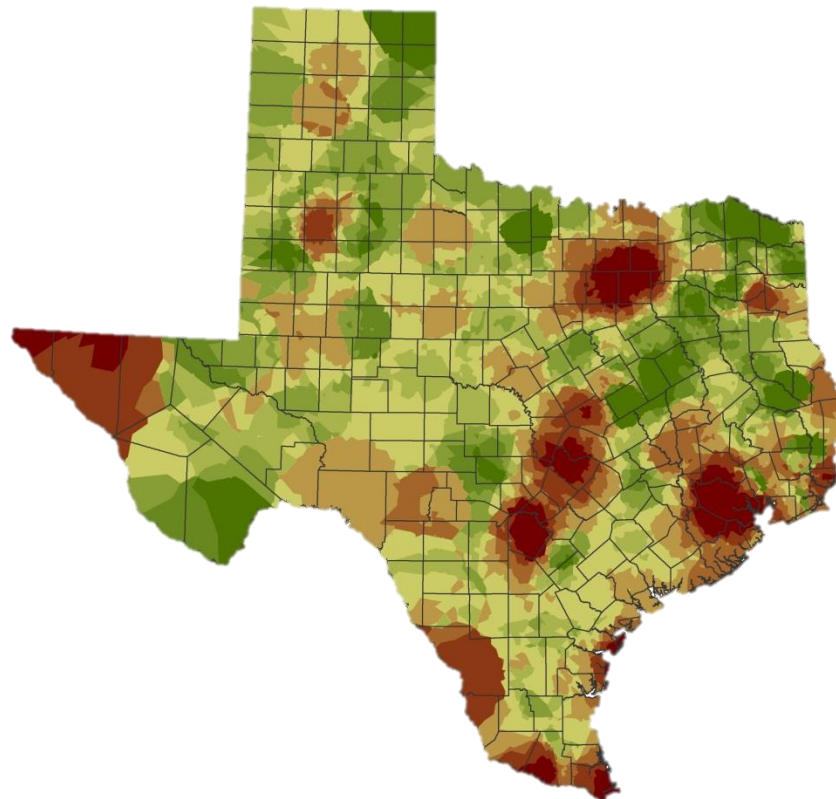


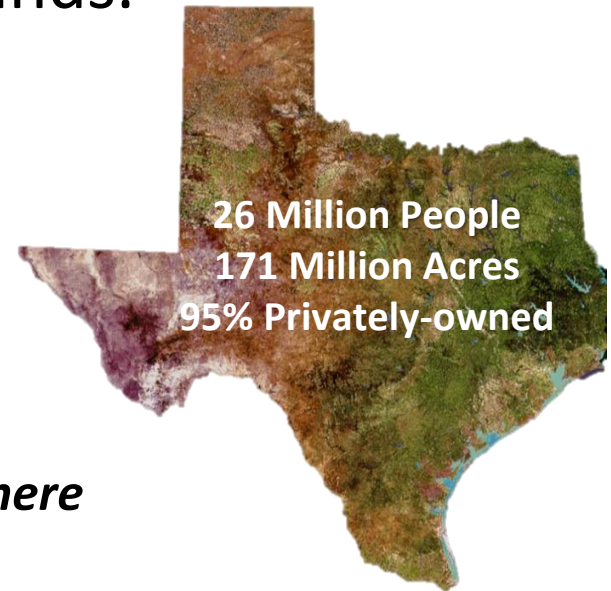
Texas Land Trends



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

Value of Rural Lands

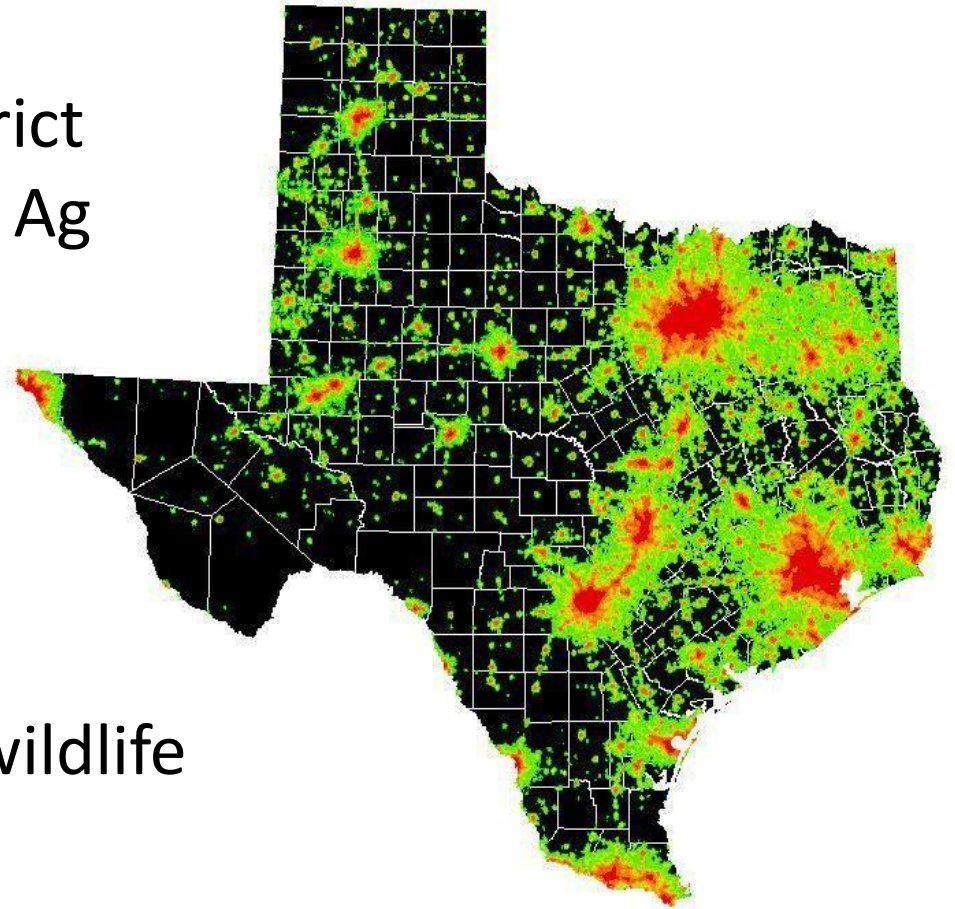
- Rural working lands play an unseen yet critical role in water/food sustainability and national/energy security.
- *Effective* conservation will require innovative solutions to sustaining private rural working lands.
- **Presentation Outline:**
 - Changes in human demographics
 - Changes in land uses/values
 - 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)

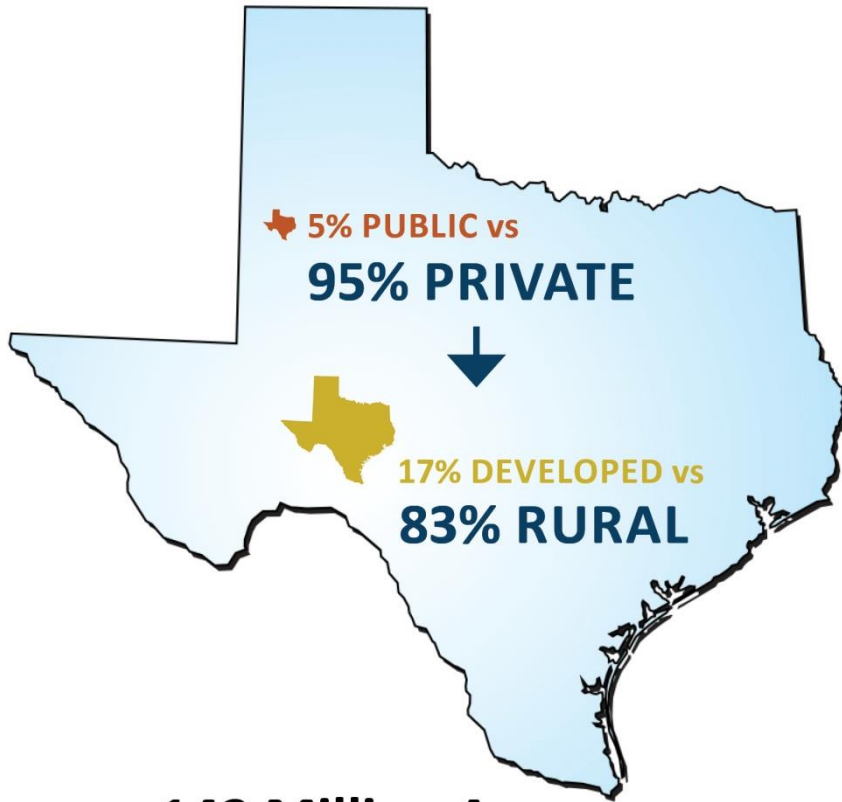


A group of about ten hikers is seen from behind, walking along a dirt trail in a vast, dry, grassy landscape. They are wearing backpacks and casual hiking attire. The terrain is hilly with scattered evergreen trees. The sky is clear and blue. The text "CHANGING PEOPLE" is overlaid in the center of the image.

CHANGING PEOPLE

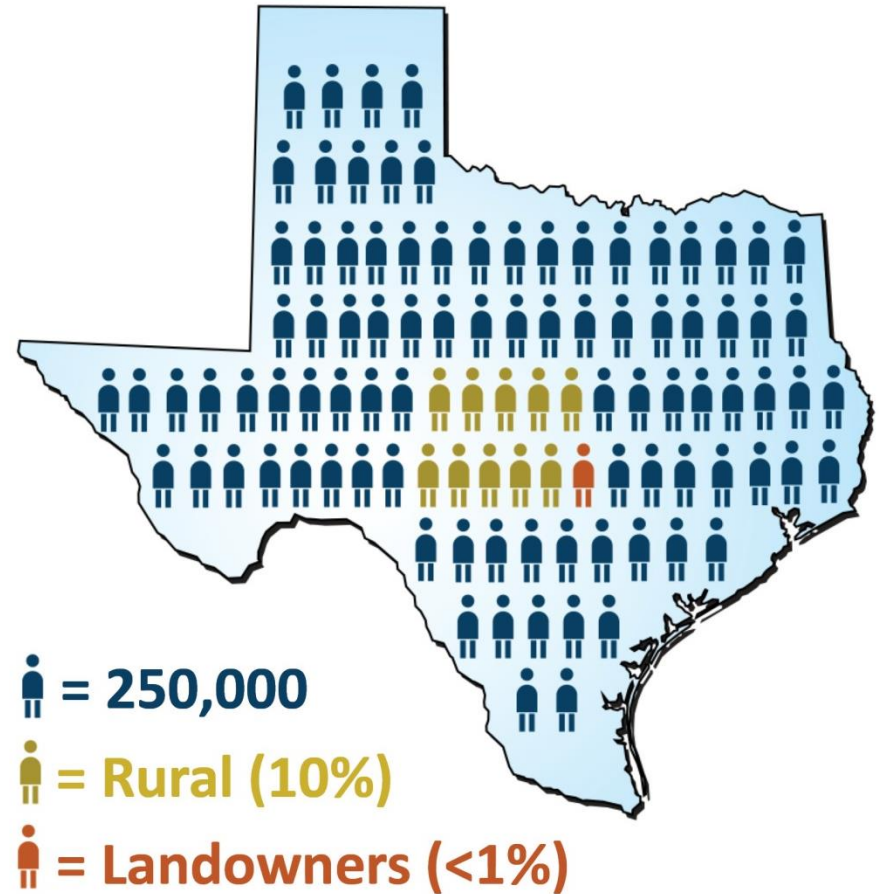
Changing Texas

171 Million Acres...



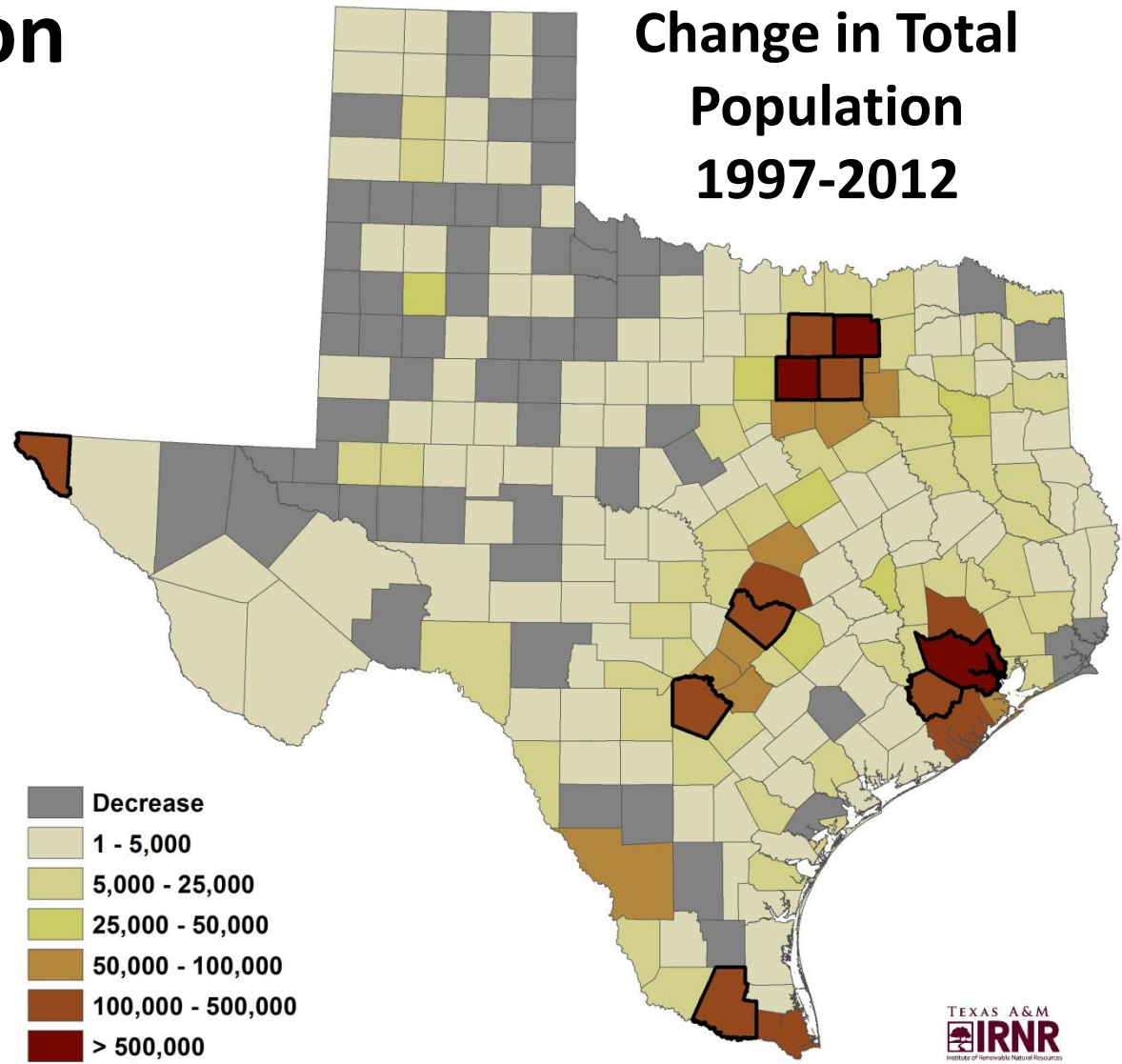
...142 Million Acres
Private Working Lands

Population: 26 Million...



Texas Population

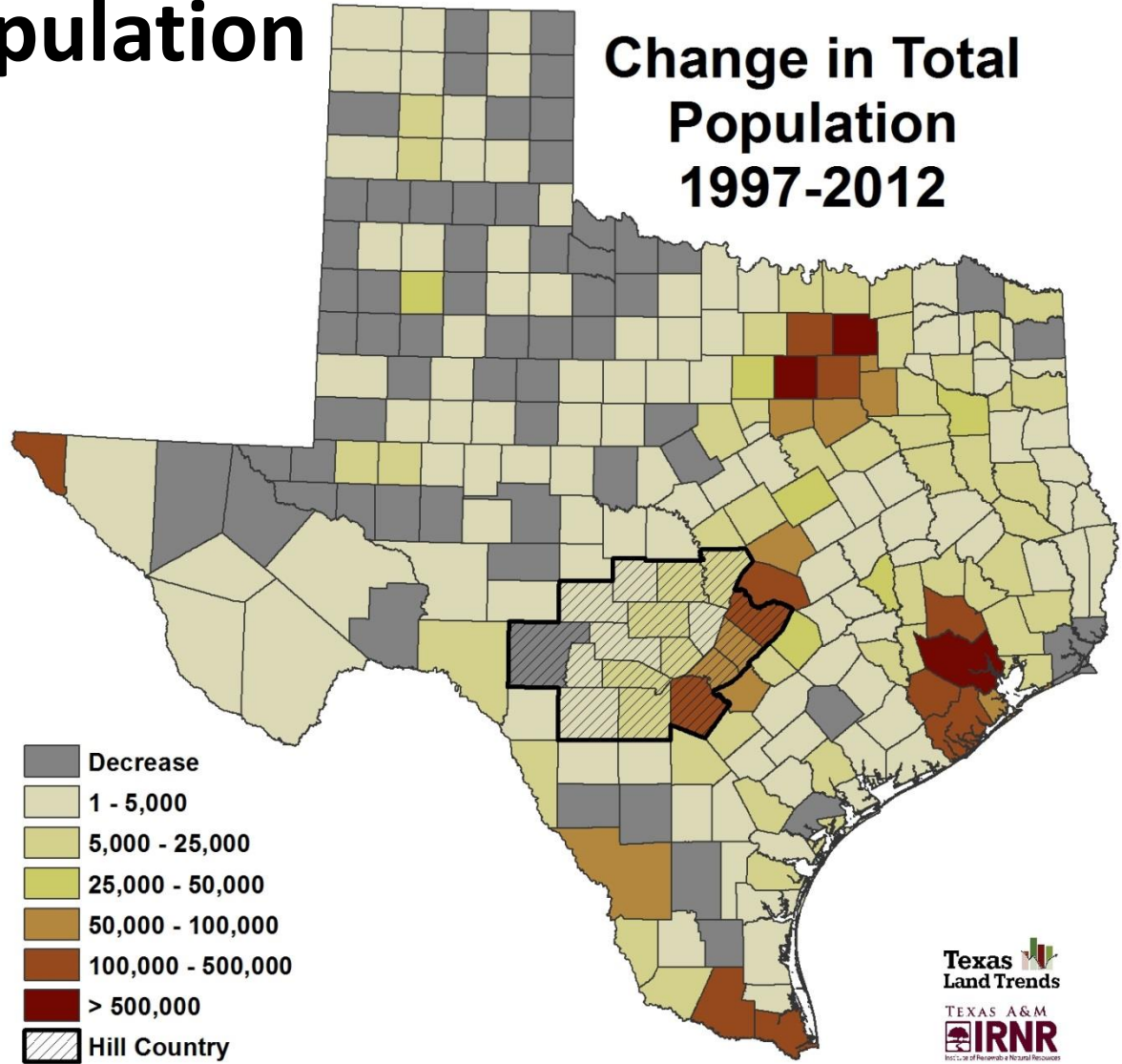
- 1997 – 19 Million
- 2012 – 26 Million
- 36% increase
- 500,000/year
- 65% of increase occurred within *Top Ten Populated Counties*



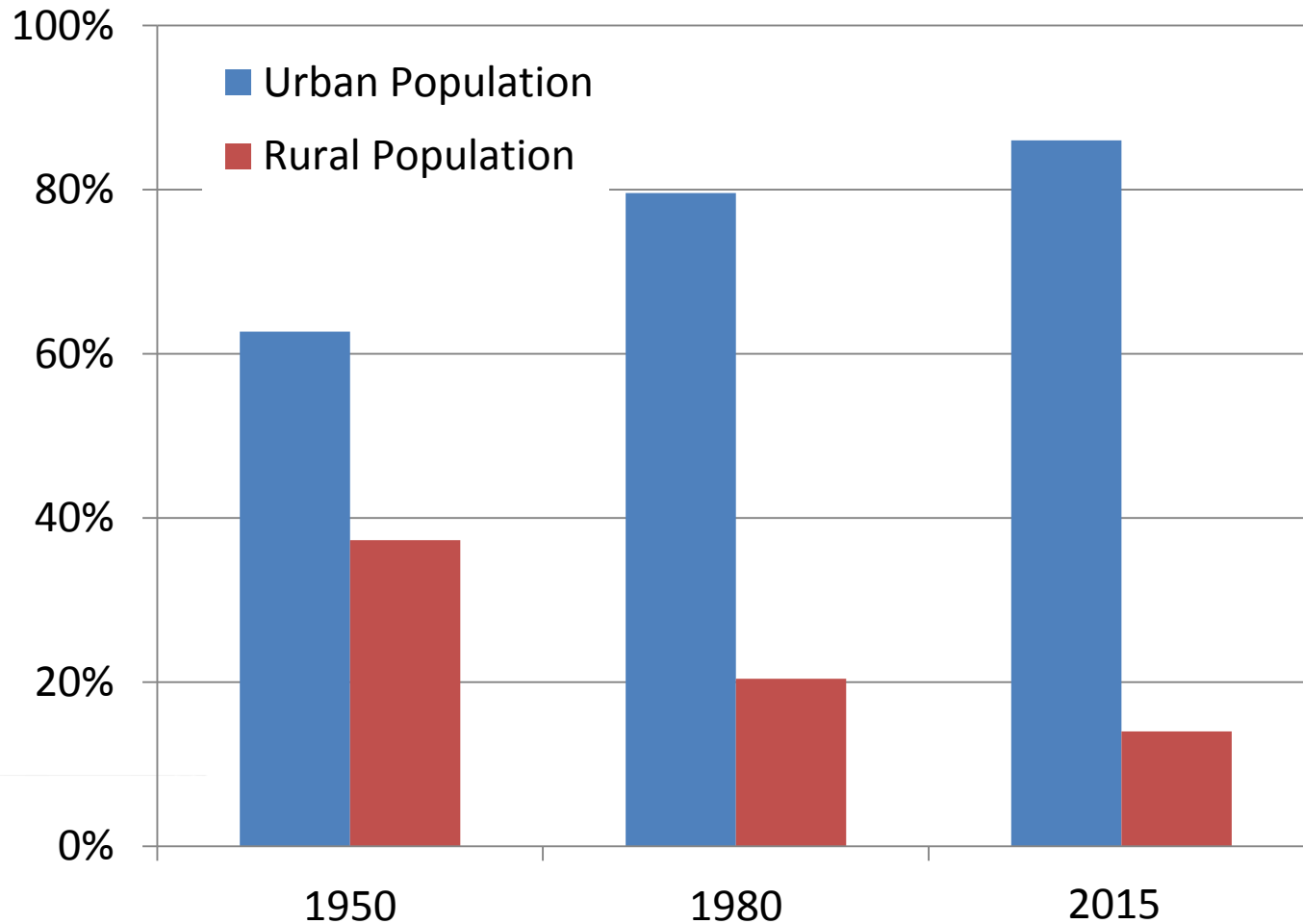
Hill Country Population

Change in Total
Population
1997-2012

- 1997 – 2.4M
- 2012 – 3.3M
- Increase-
~922K
- 38% increase
- 61,529/year



Texas Rural and Urban Populations



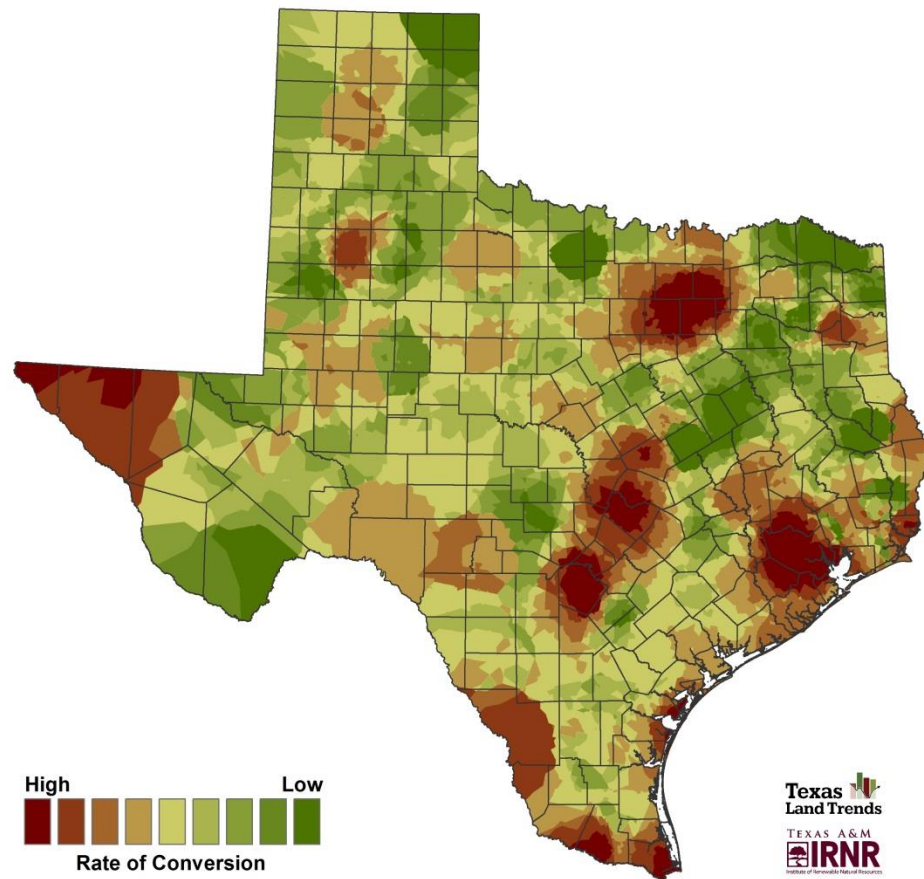
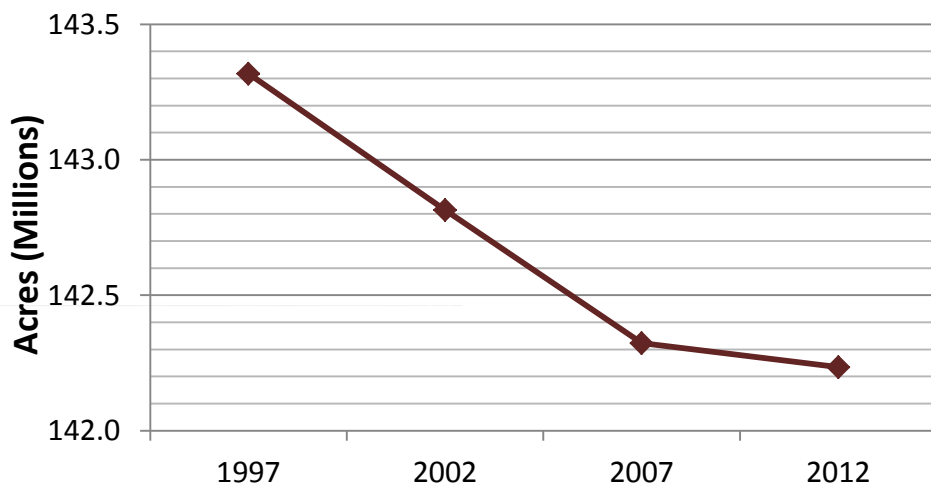
A wide-angle landscape photograph featuring a long, straight dirt road that recedes into the distance. The road is flanked by golden-yellow grasses and a wooden fence on the left. The background shows rolling hills and a vast, open plain under a sky filled with large, white, billowing clouds. The overall mood is serene and expansive.

CHANGING...PLACES

Loss of Working Lands: Statewide

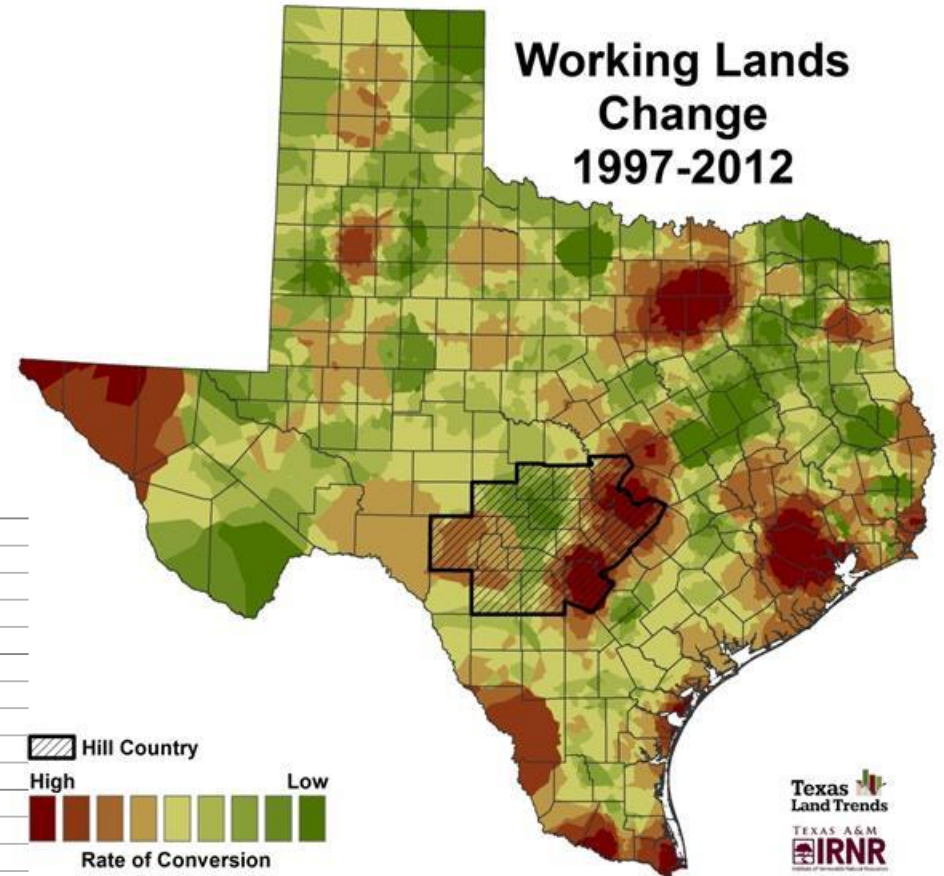
- 1997 – 143.4 Million acres
- 2012 – 142.3 Million acres
- Loss 1.1 Million acres

Total Working Lands

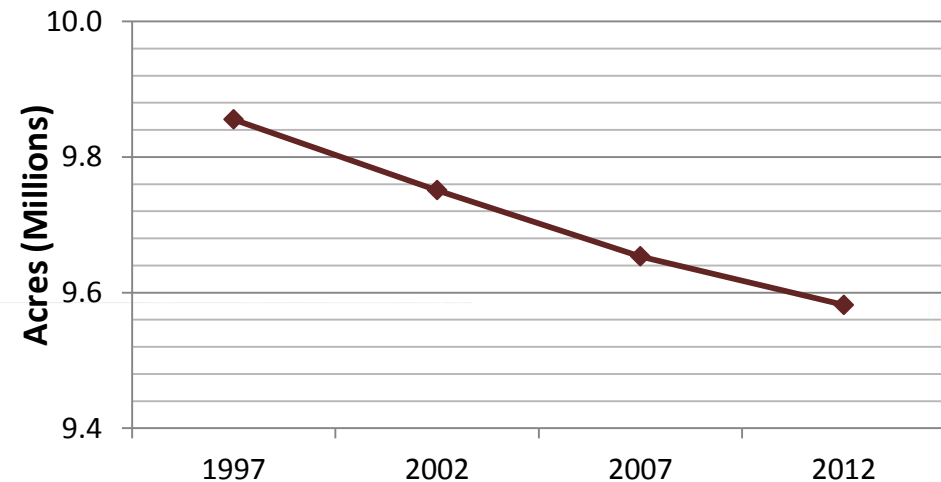


Loss of Working Lands: Hill Country

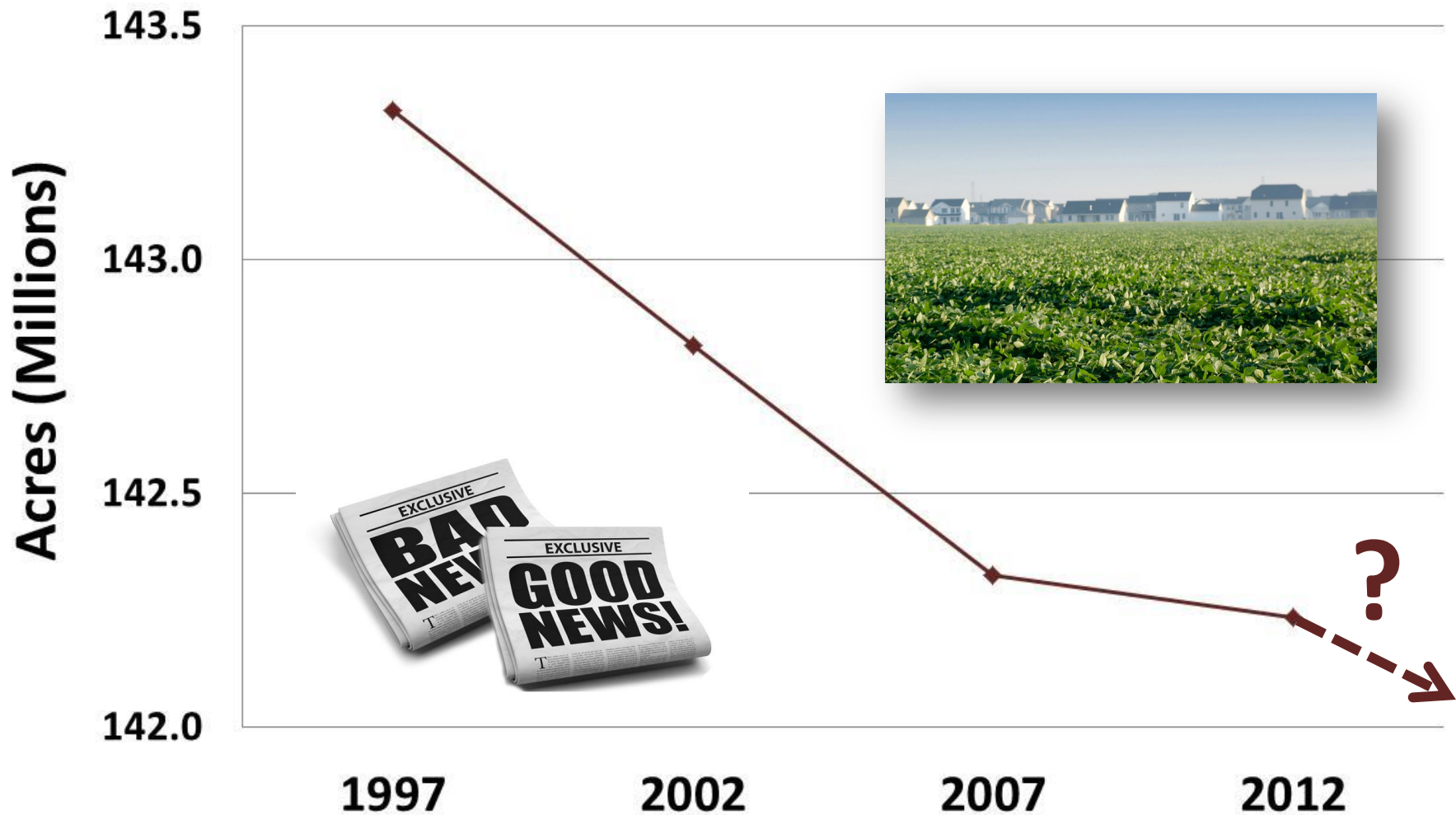
- 1997 – 9.85 Million acres
- 2012 – 9.58 Million acres
- Loss 274K acres



Hill Country Working Lands



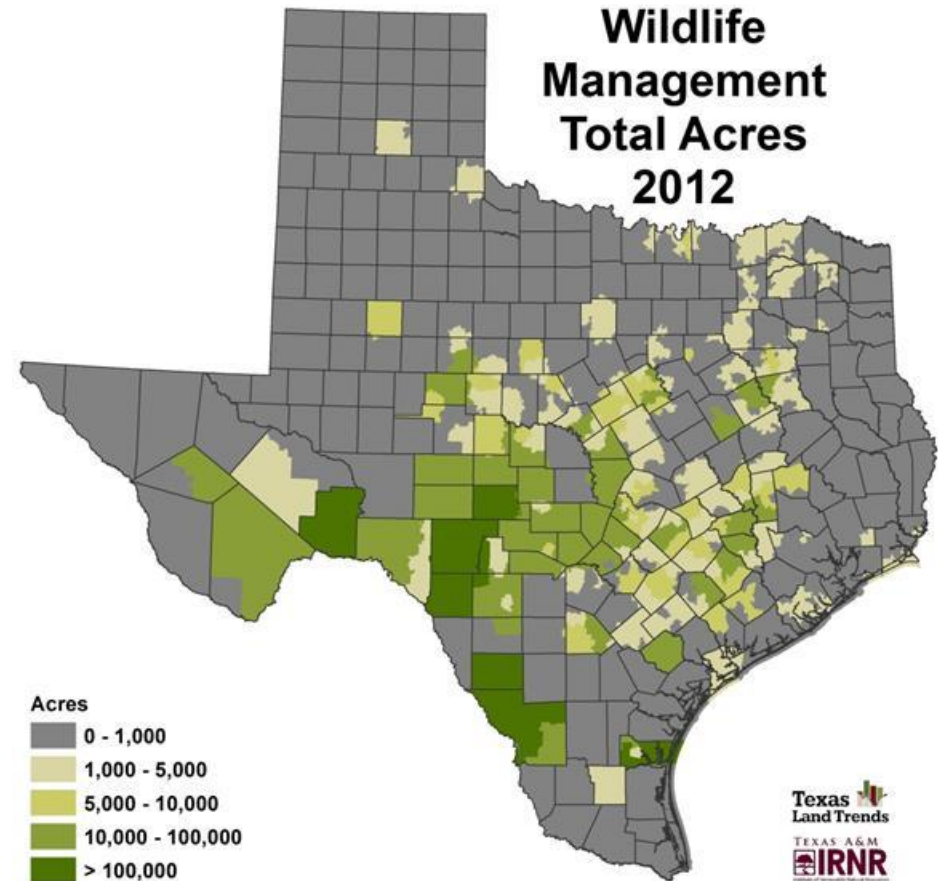
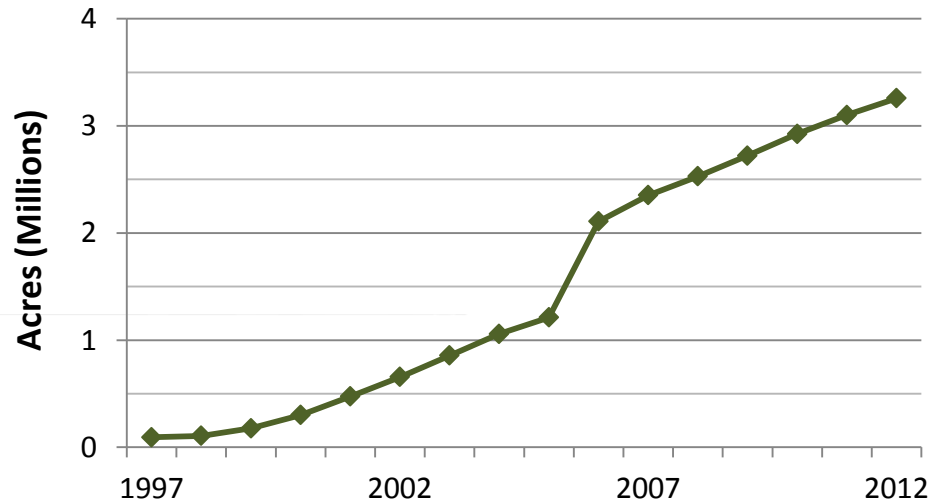
Working Land Loss – *Future?*



Wildlife Management: Statewide

- 1997 – 92K acres
- 2012 – 3.3 Million acres
- Gain of 3.2 Million acres

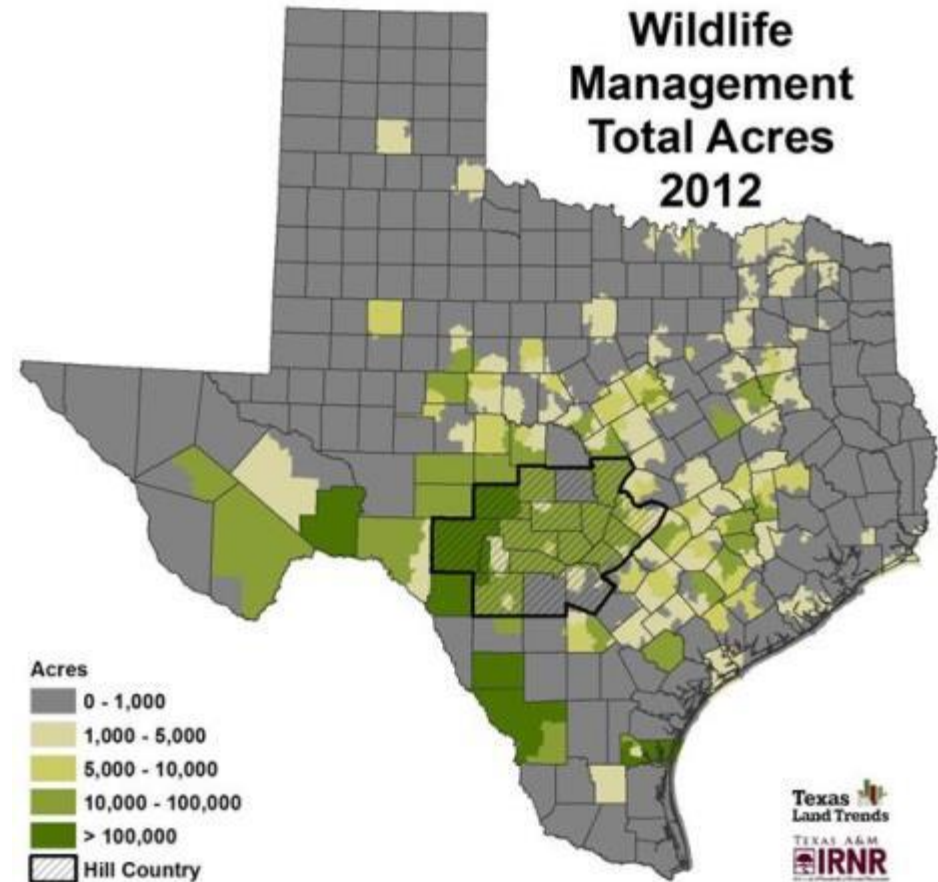
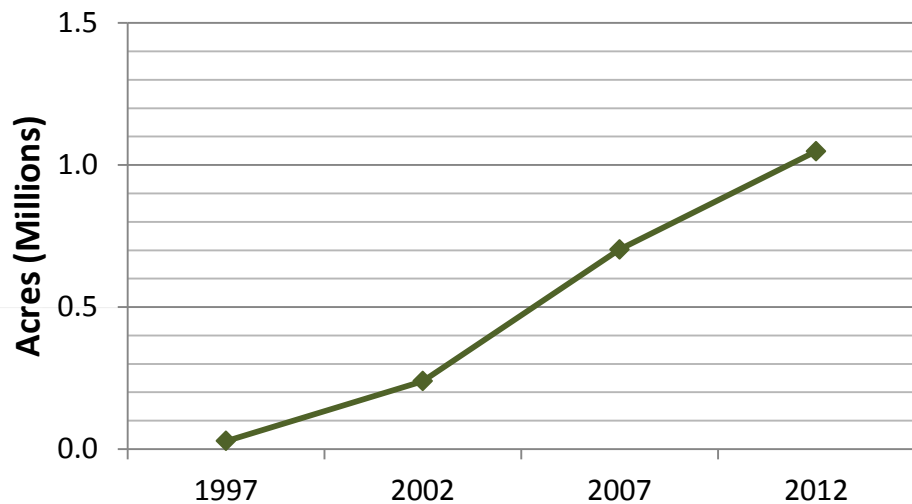
Total Wildlife Management



Wildlife Management: Hill Country

- 1997 – 28K acres
- 2012 – 1M acres
- Gain of ~1M acres

Hill Country Wildlife Management





THE GOOD

THE BAD

AND THE UGLY

ART (C) ZACH FELLSSIMO 2008

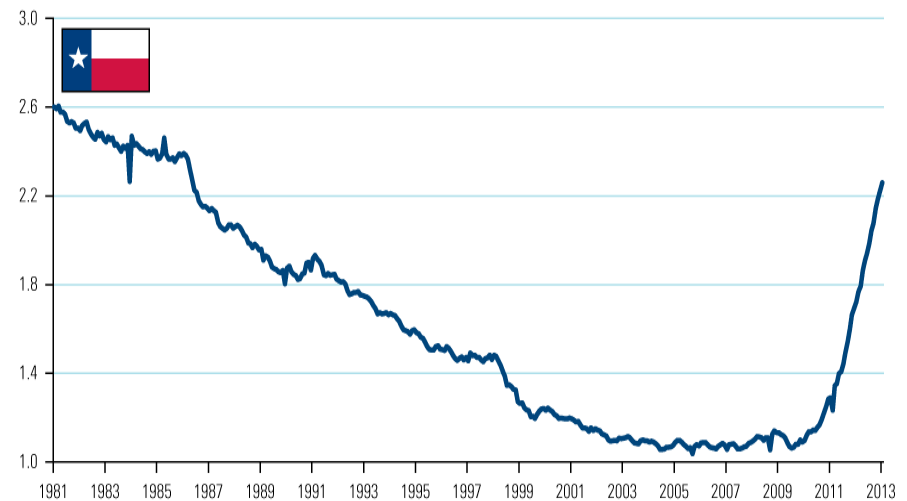
The Good...



Oil and Gas

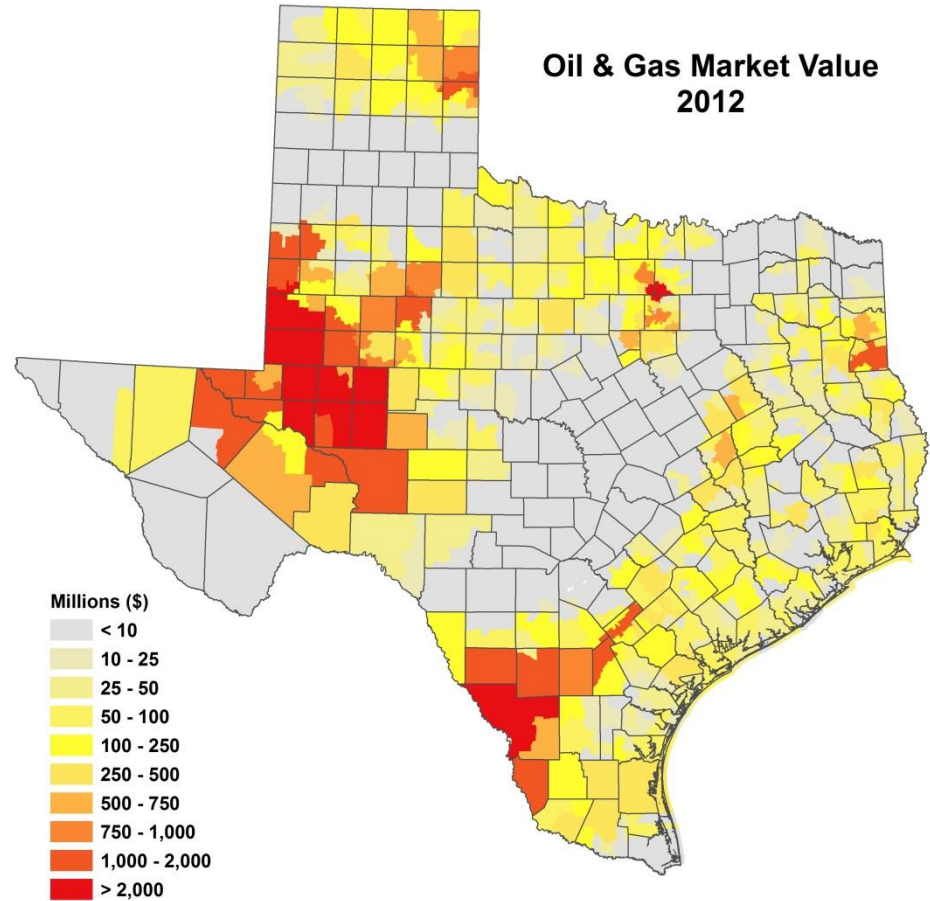
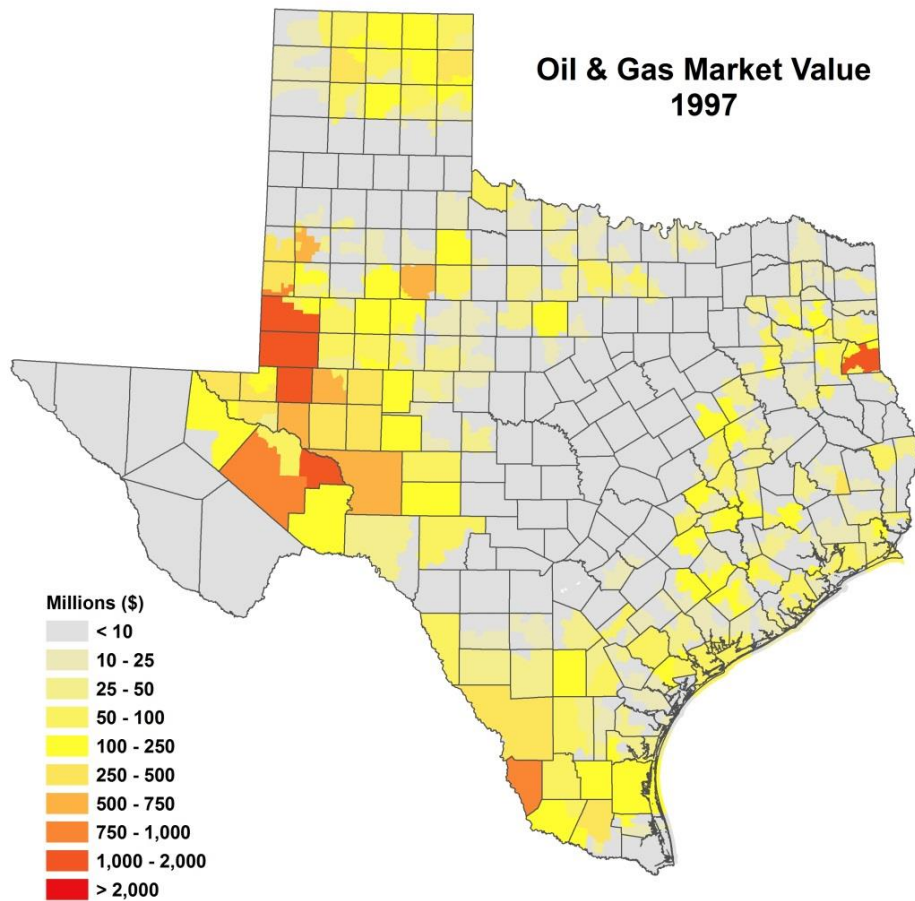
- *Game Changer*—Texas is leading crude oil production state in part to 3 large shale gas plays
 - Barnett, Haynesville and Eagle Ford
- U.S. oil production expected to exceed that of Saudi Arabia by 2017
- Eagle Ford Shale Story
 - \$87B in revenue (2014)
 - Since 2014, natural gas production has *doubled*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

Texas Crude Oil Production (Million Barrels per Day)

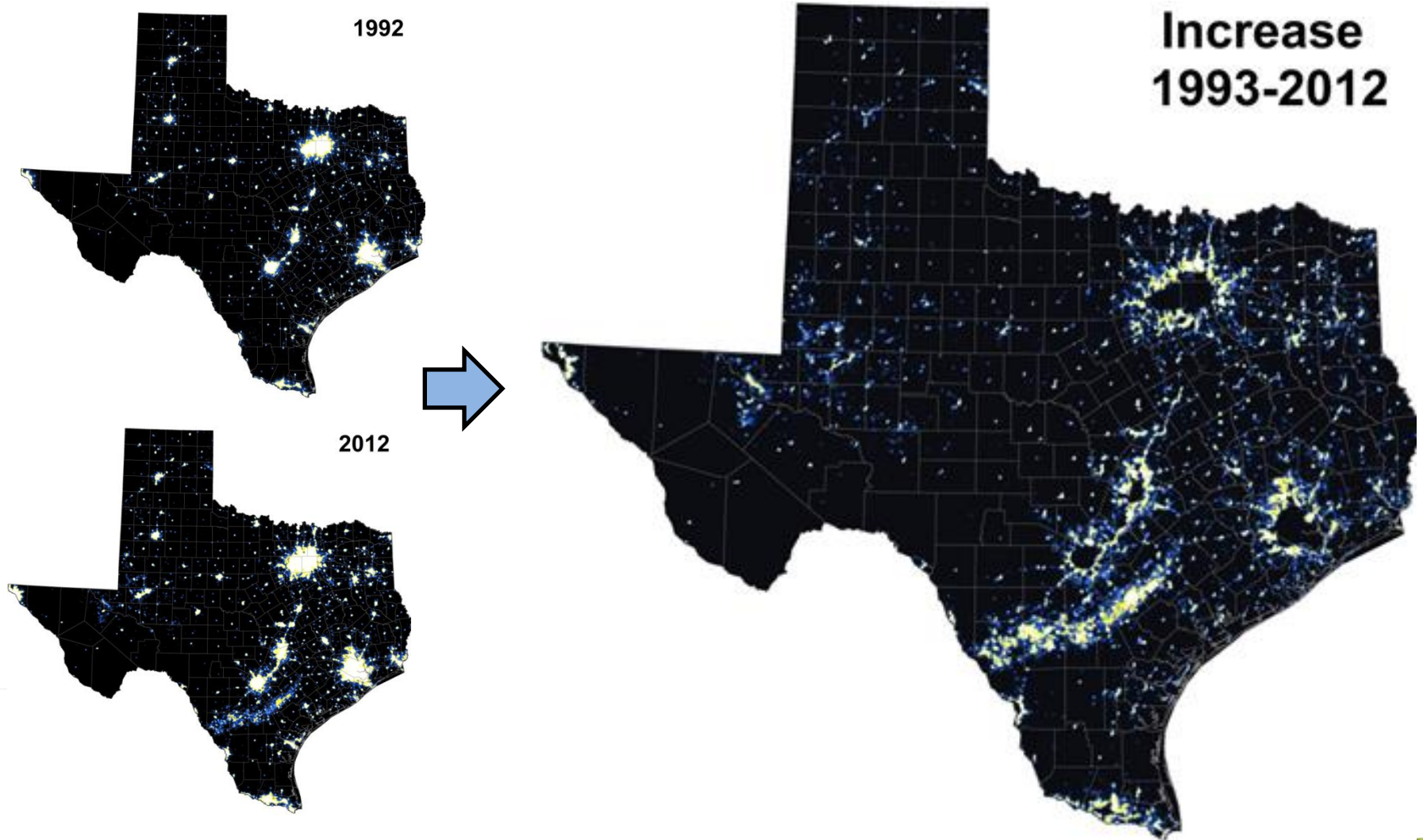


Source: Bloomberg

Oil and Gas

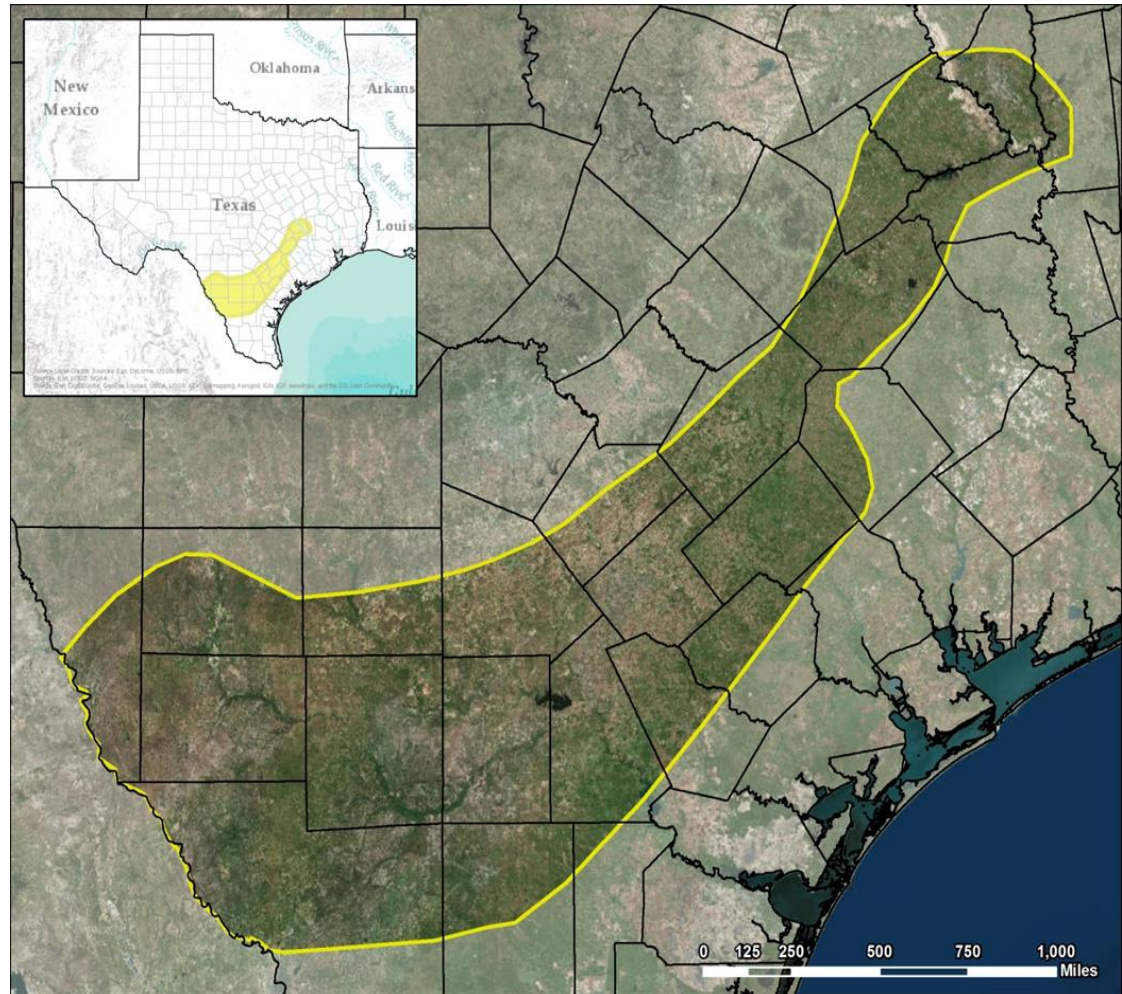


Night Time Illumination



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

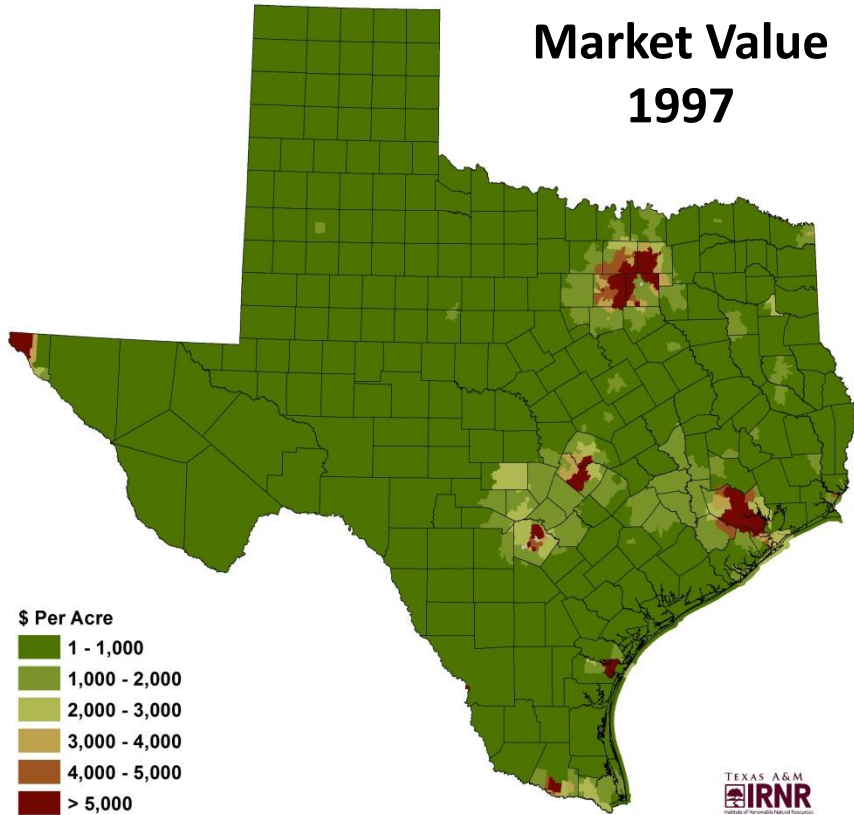


The Bad...

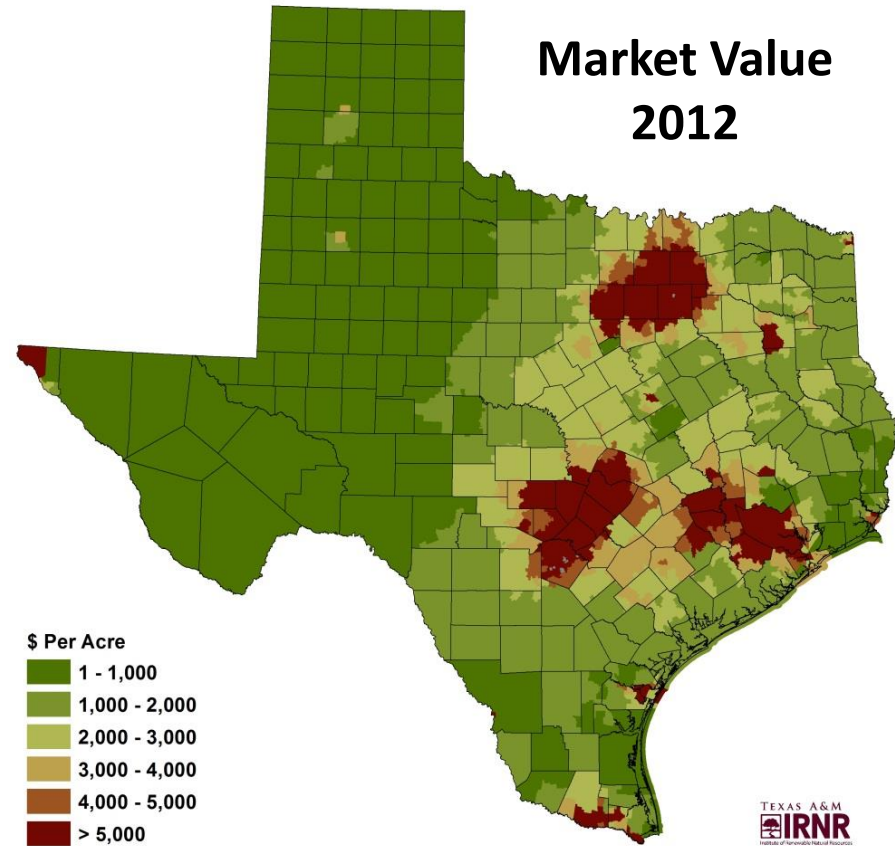


Market Value - *Driver*

Market Value
1997



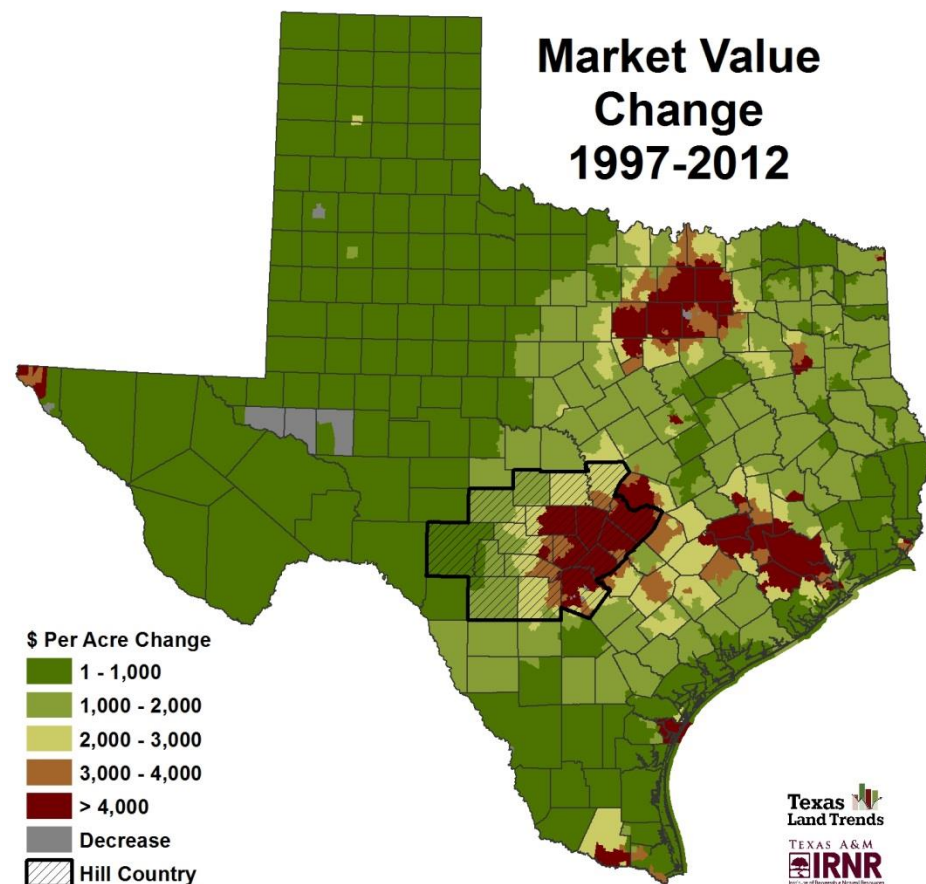
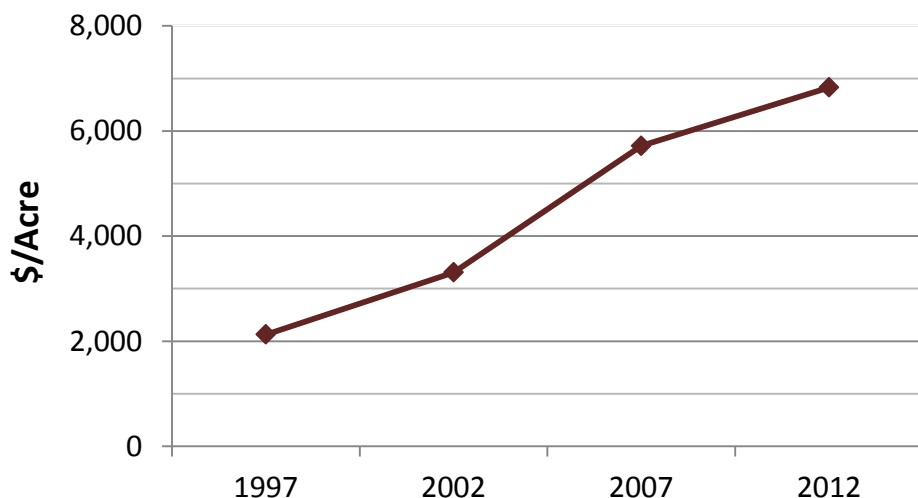
Market Value
2012



Market Value - *Hill Country*

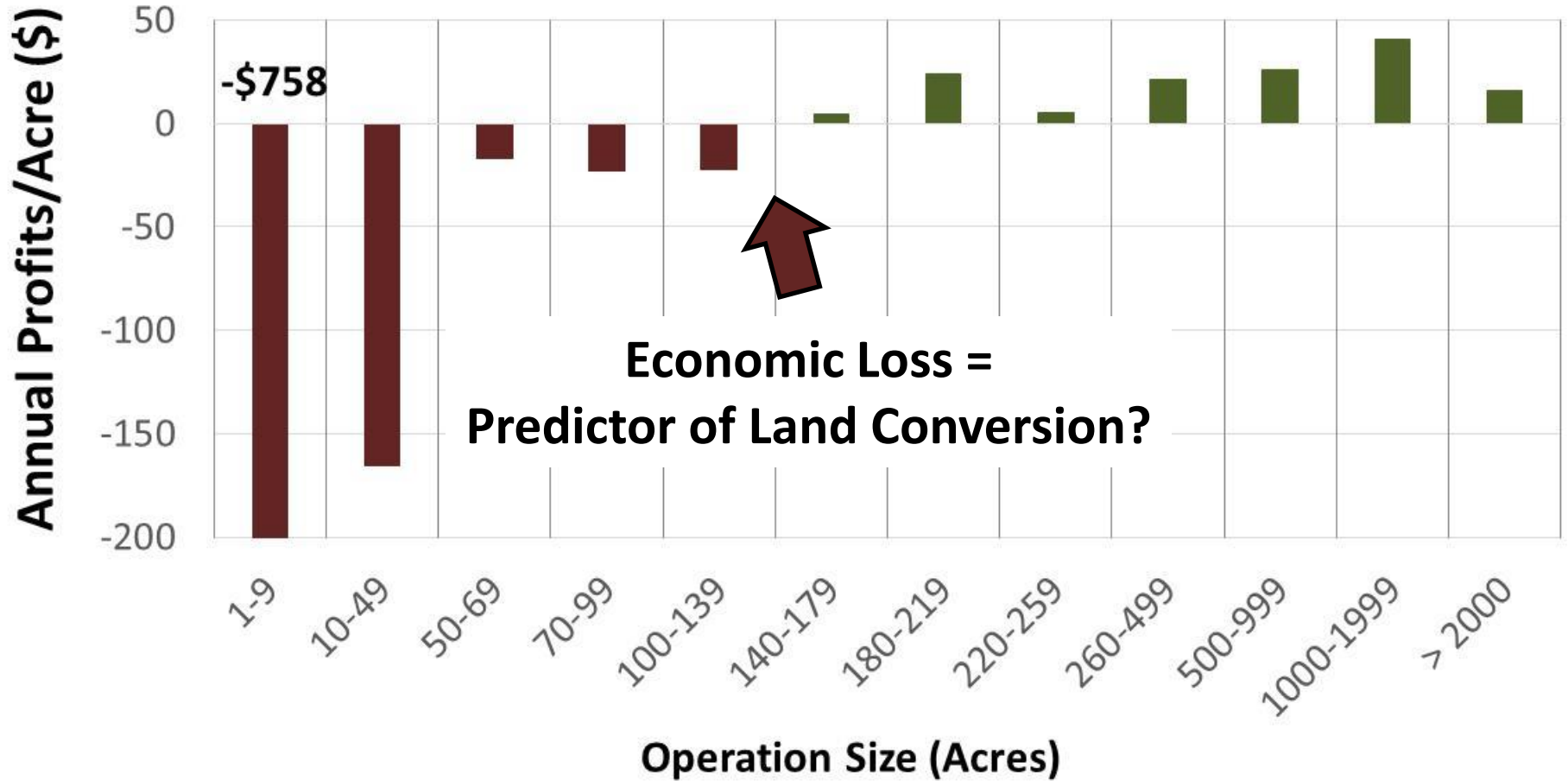
- 1997 – \$2,127/Acre
- 2012 – \$6,830/Acre
- Gain of \$4,703/Acre

Hill Country Average Market Value



Farm and Ranch Proceeds - *Driver*

Net Farm and Ranch Proceeds by Ownership Size, 2012



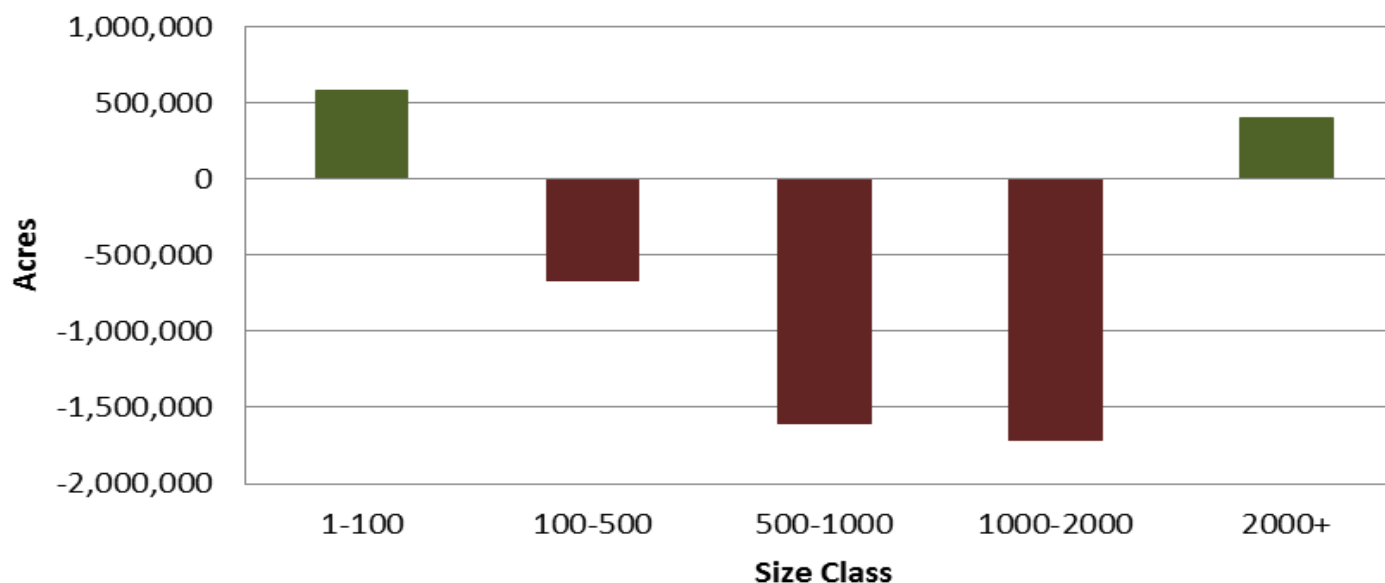
The Ugly...



Ownership Size - Acres

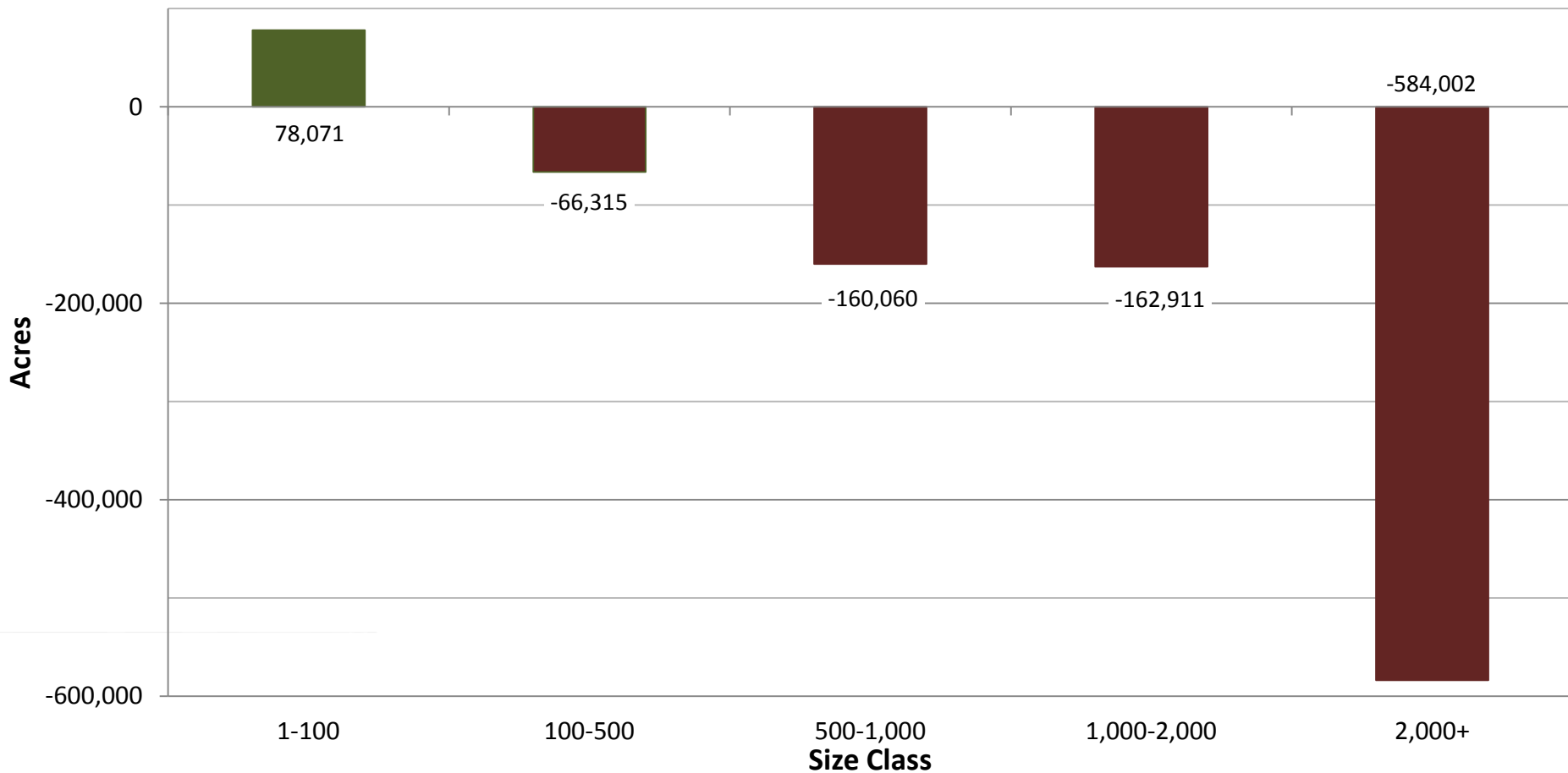
- Ownership size = fragmentation
- Increase (500K acres) of <100 acre farms
- Decrease (4M acres) of 100-2000 acre farms
- Increase (400K acres) of >2000 acre farms

Acres Change By Size Class (1997-2012)

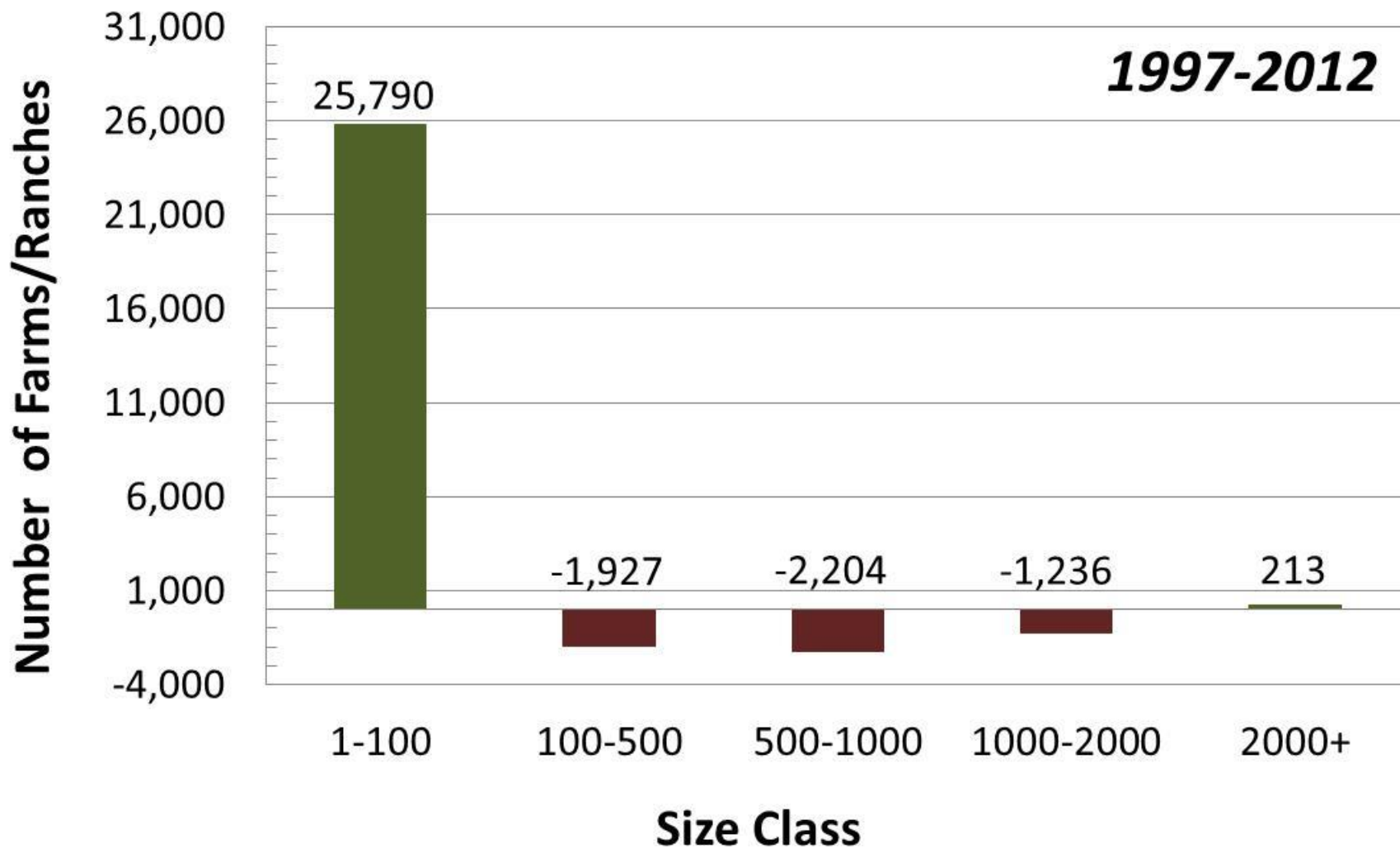


Ownership Size (Acres) - *Hill Country*

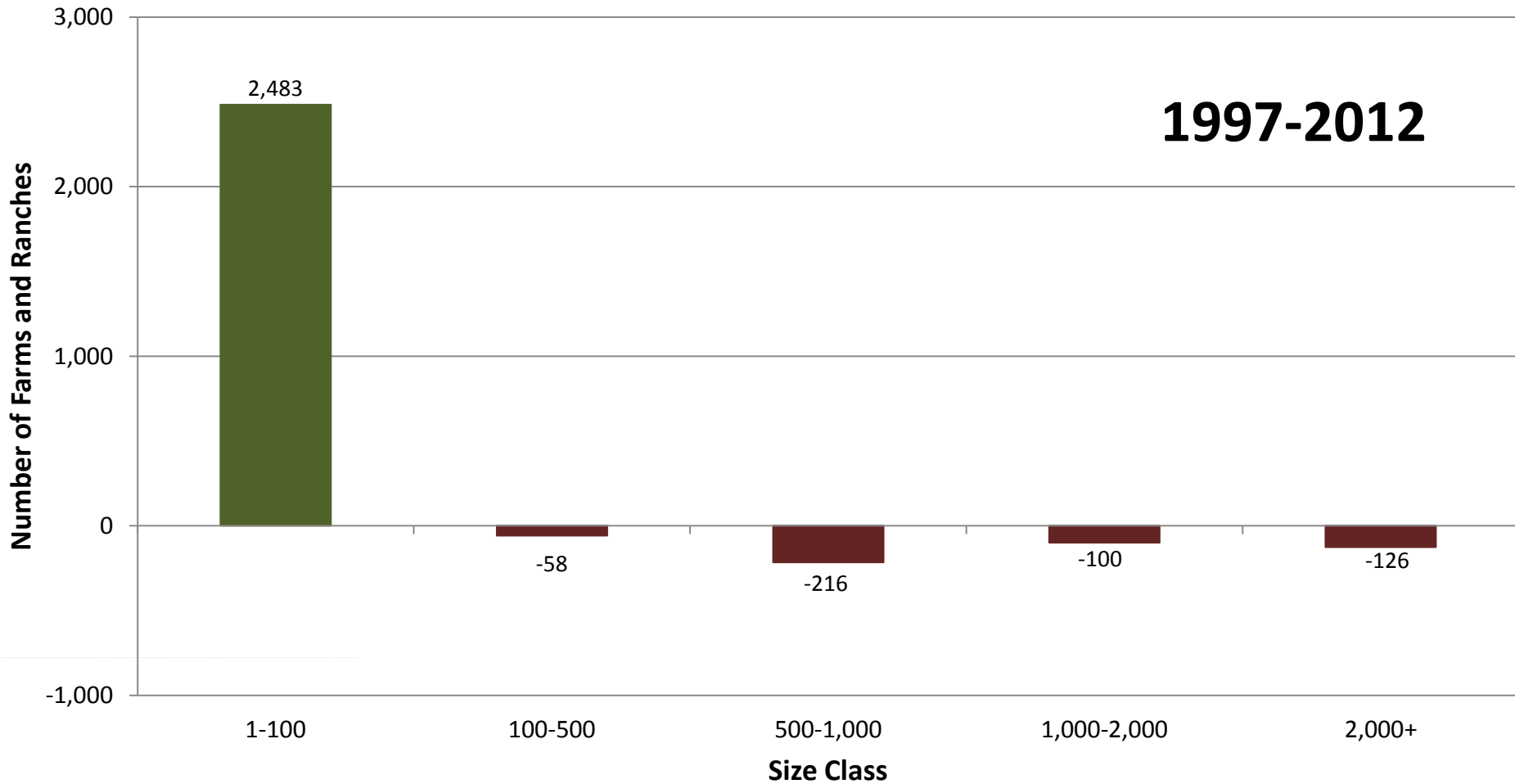
Acres Change By Size Class (1997-2012)



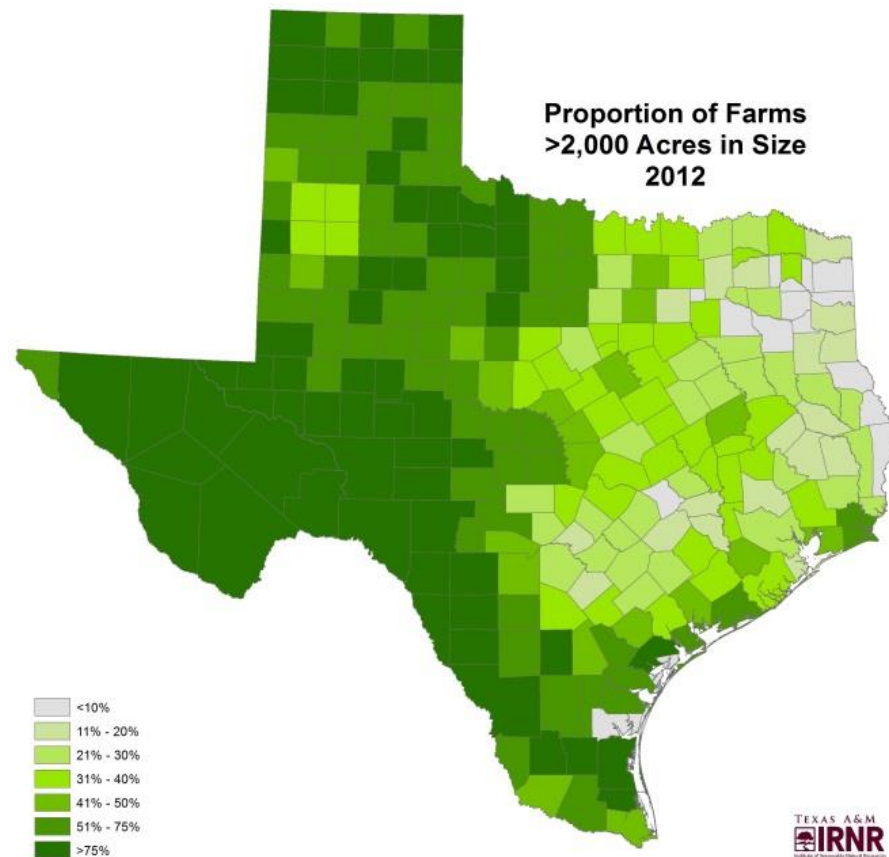
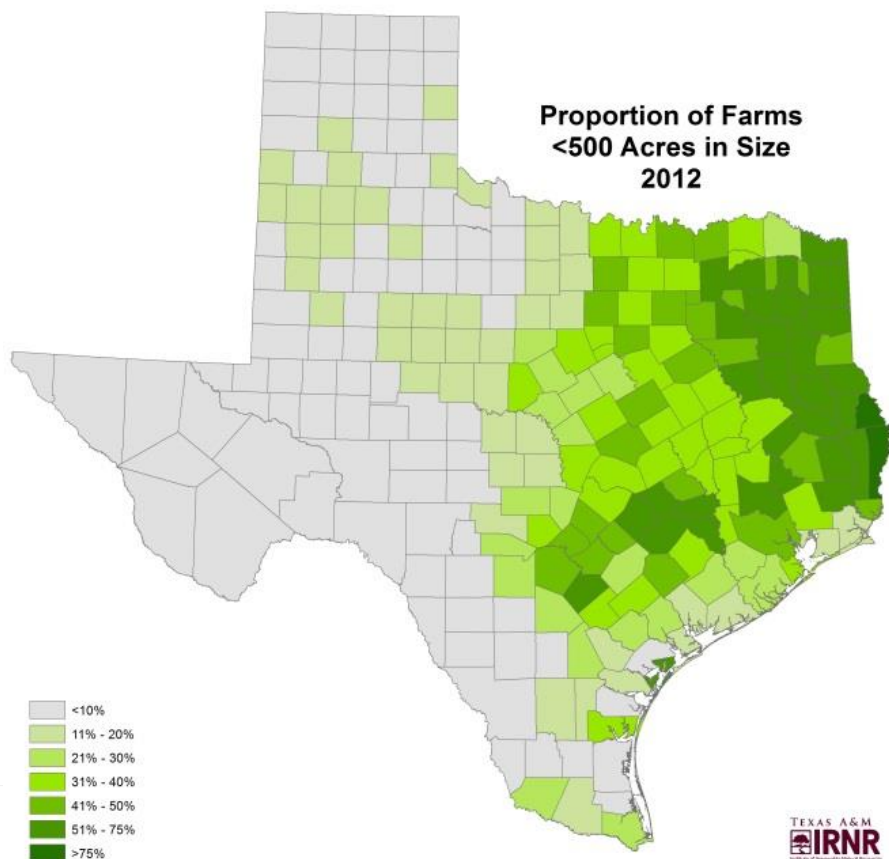
Ownership Size – Number



Ownership Size – *Hill Country*



Ownership Size – *Distribution*



WATER-LAND CONNECTION



Why “Land” Matters?

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

-President Lyndon B. Johnson

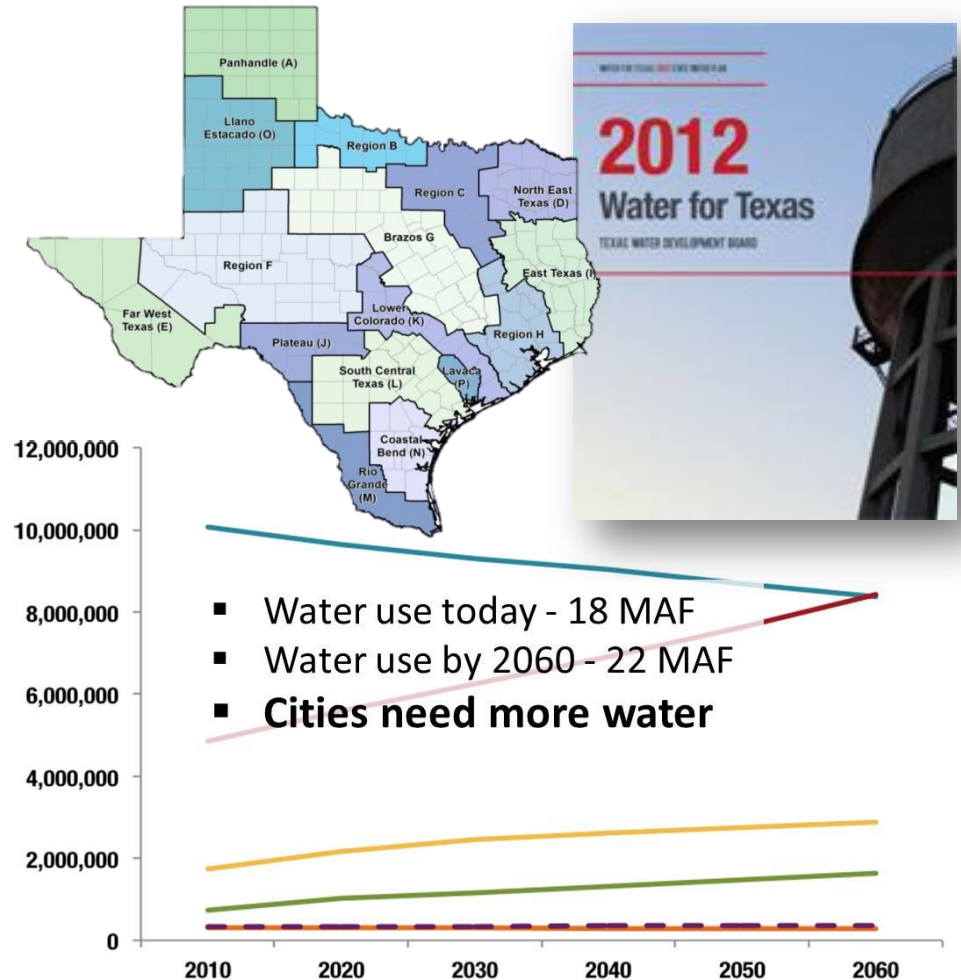


Versus



Water Demand and State Plan

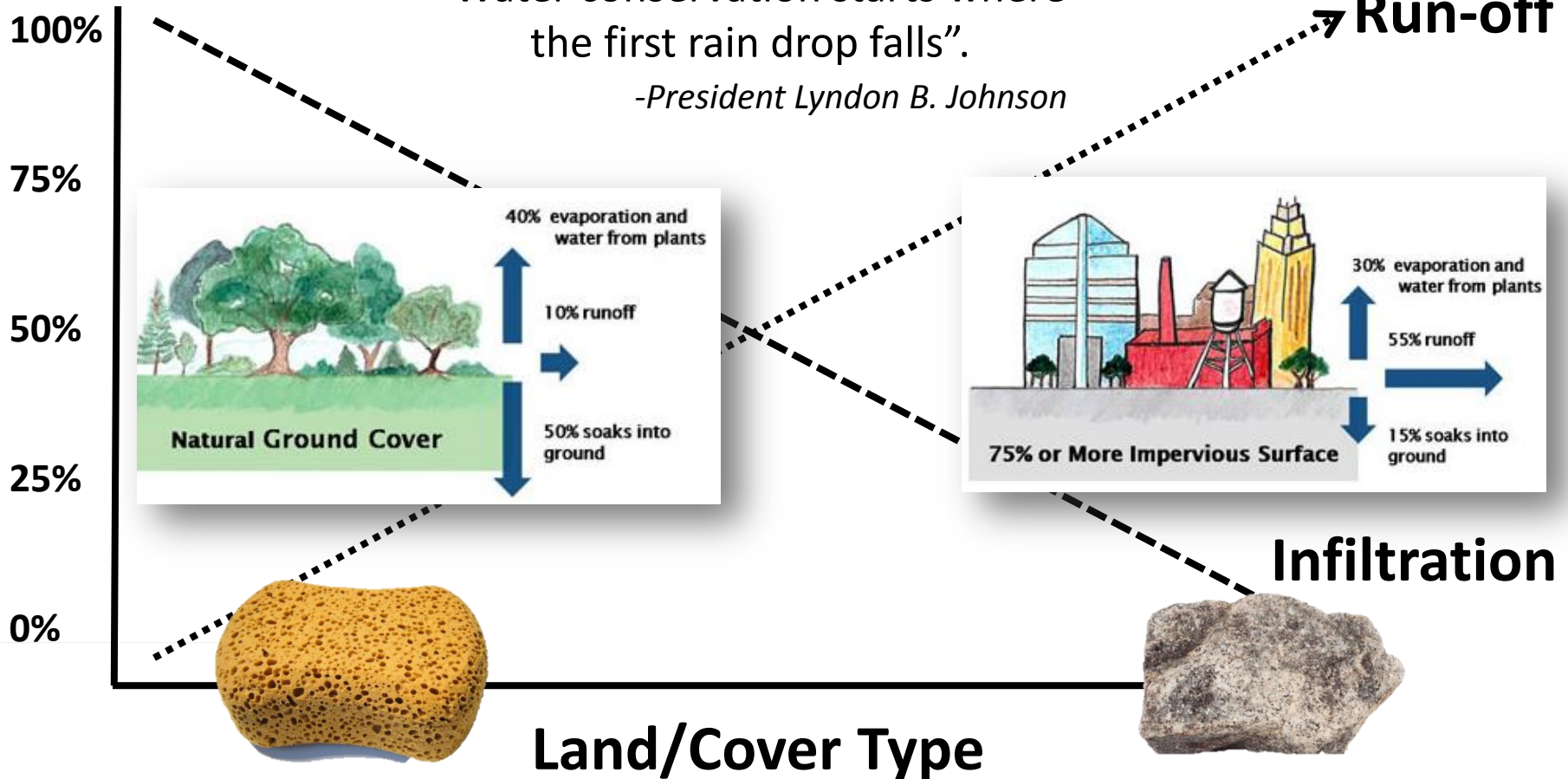
- State water plan expected to generate 9 million acre-feet/year
- Implementation Costs = **\$53 billion**
 - Up from \$30.7 billion in 2007



Water Conservation 101

“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?



44K ac-ft annually

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

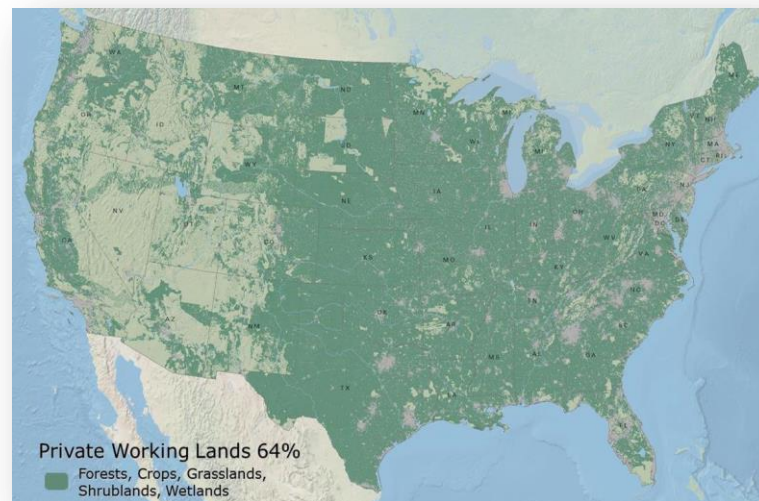
-President Lyndon B. Johnson

A photograph of two men standing in a field. The man on the left is wearing a light blue button-down shirt and blue jeans with a large silver belt buckle. The man on the right is wearing a white polo shirt and blue jeans. In the background, there is a green tractor, a red implement, and several hay bales. The text "CHANGING...PERSPECTIVES" is overlaid in the center of the image.

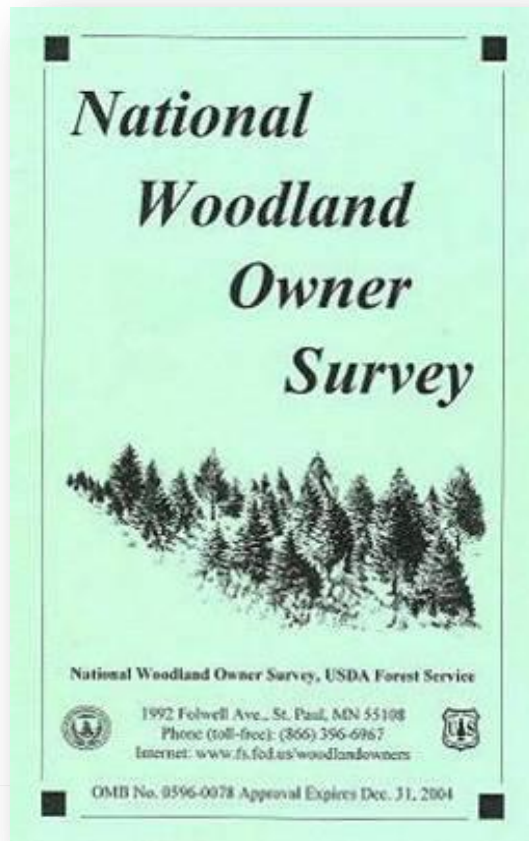
CHANGING...PERSPECTIVES

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...



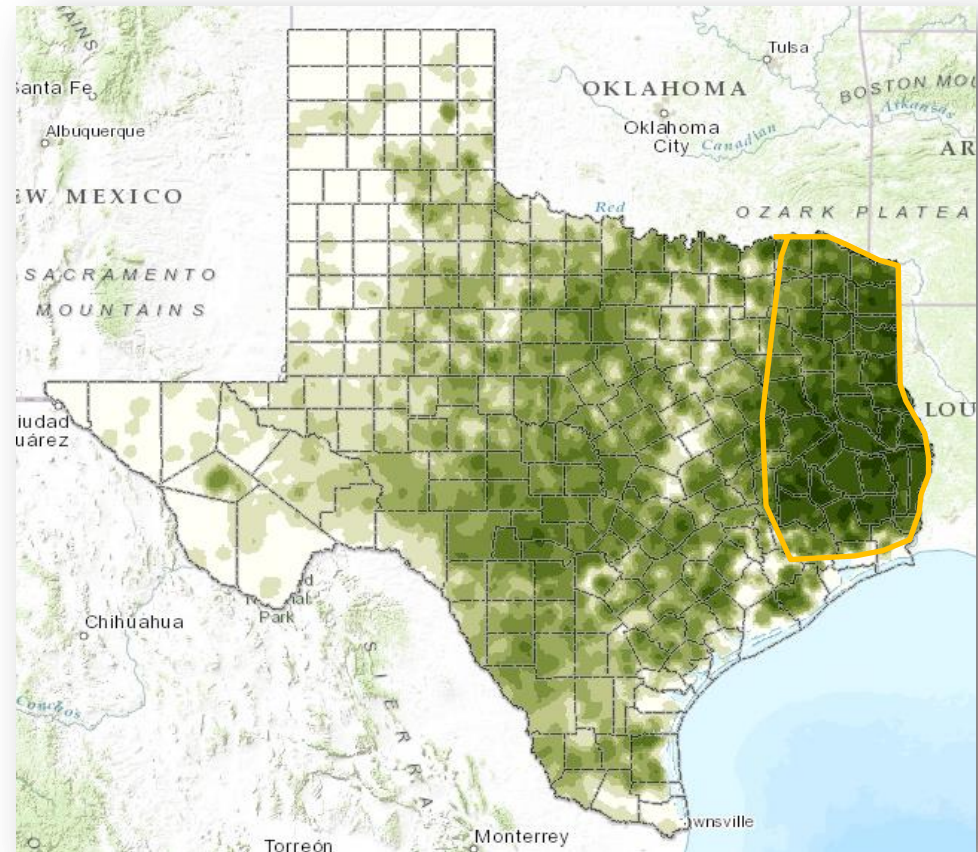
Family Forests by the Numbers

East Texas

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

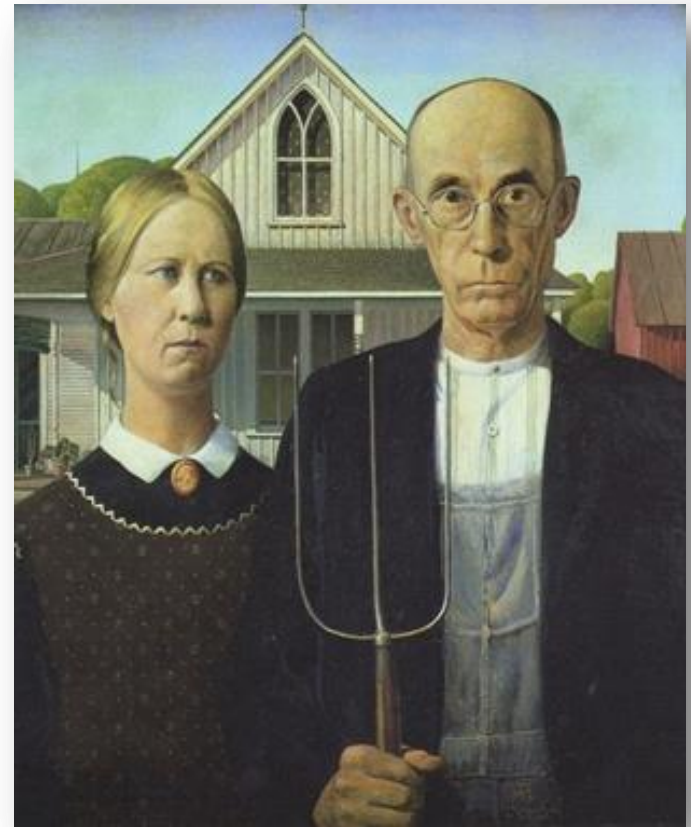
West Texas

- Acres: 35,983,000
- Ownerships: 292,000
- Average size: 123.4 ac
- Owners: 498,000



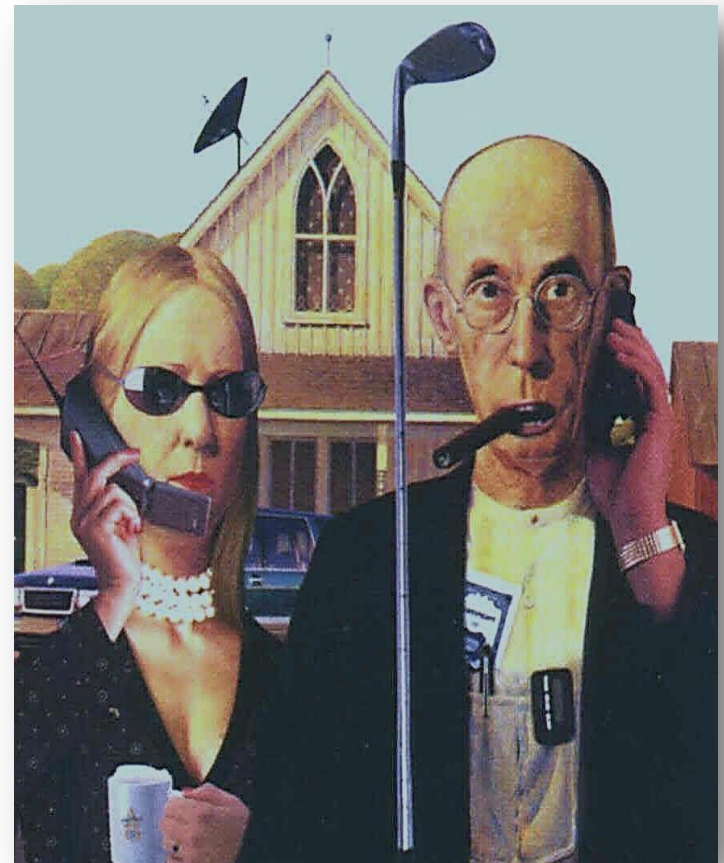
Landowner Demographics

- 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.



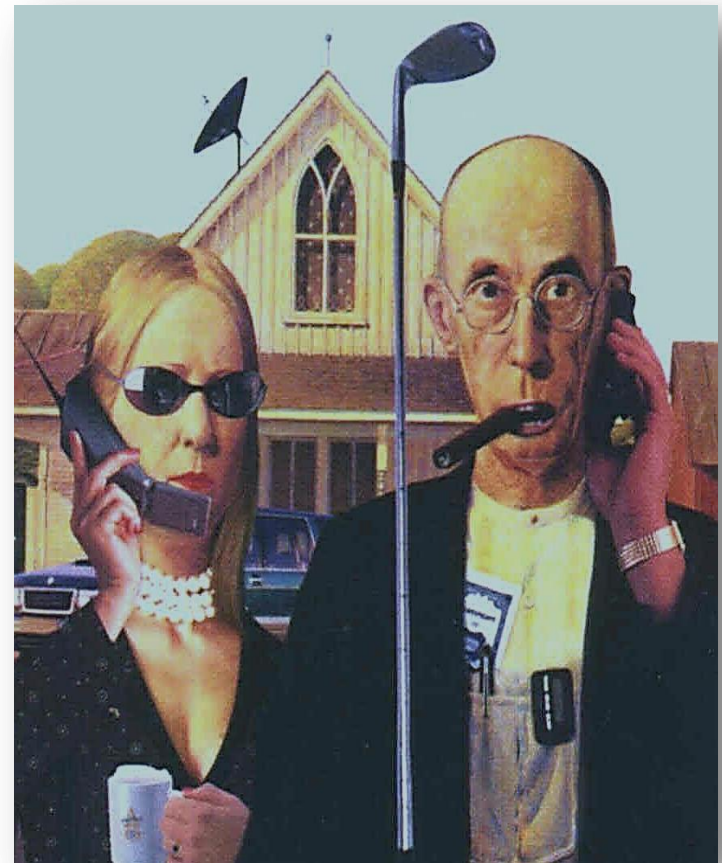
Landowner Demographics

- 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.

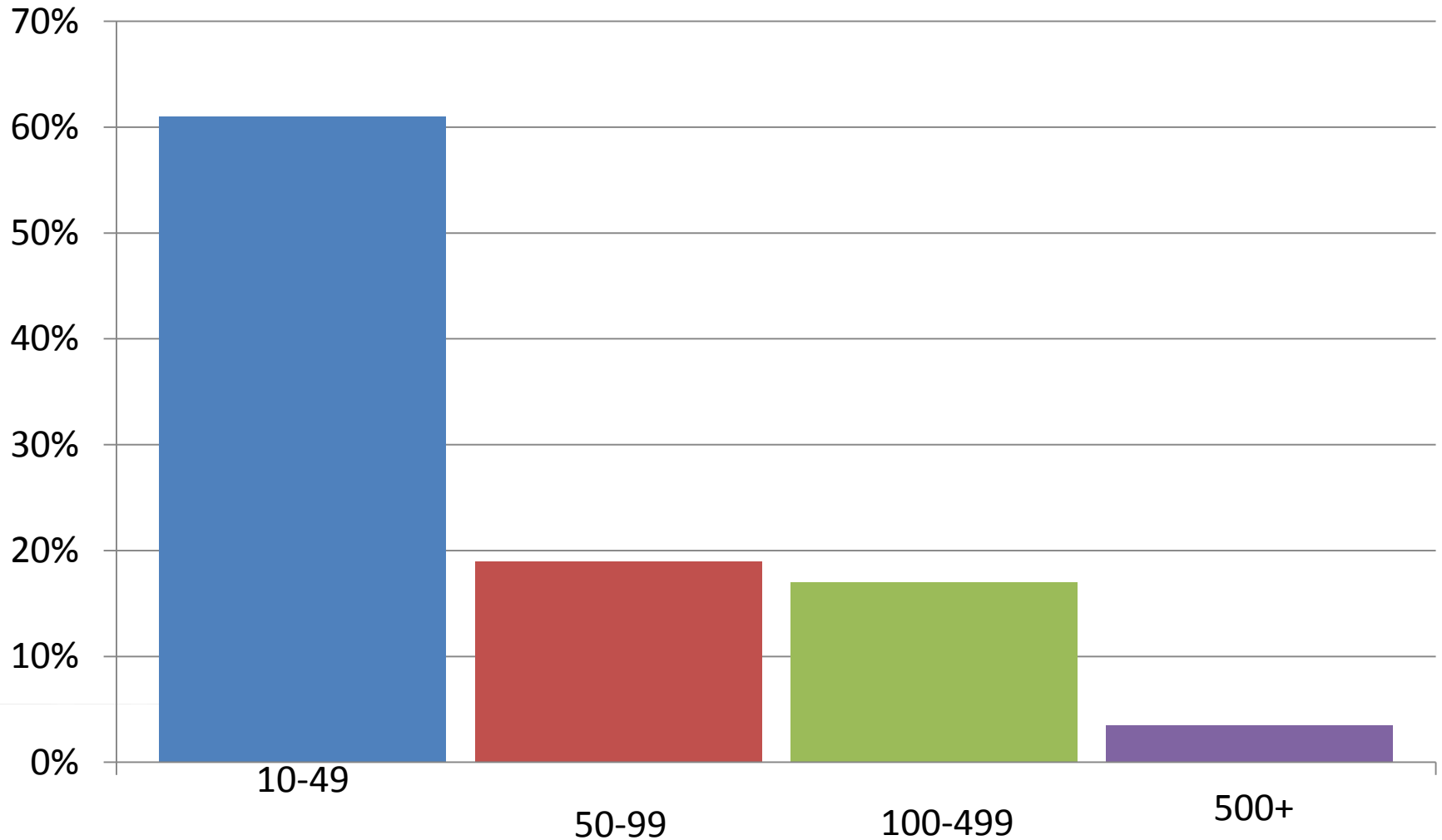


Landowner Demographics

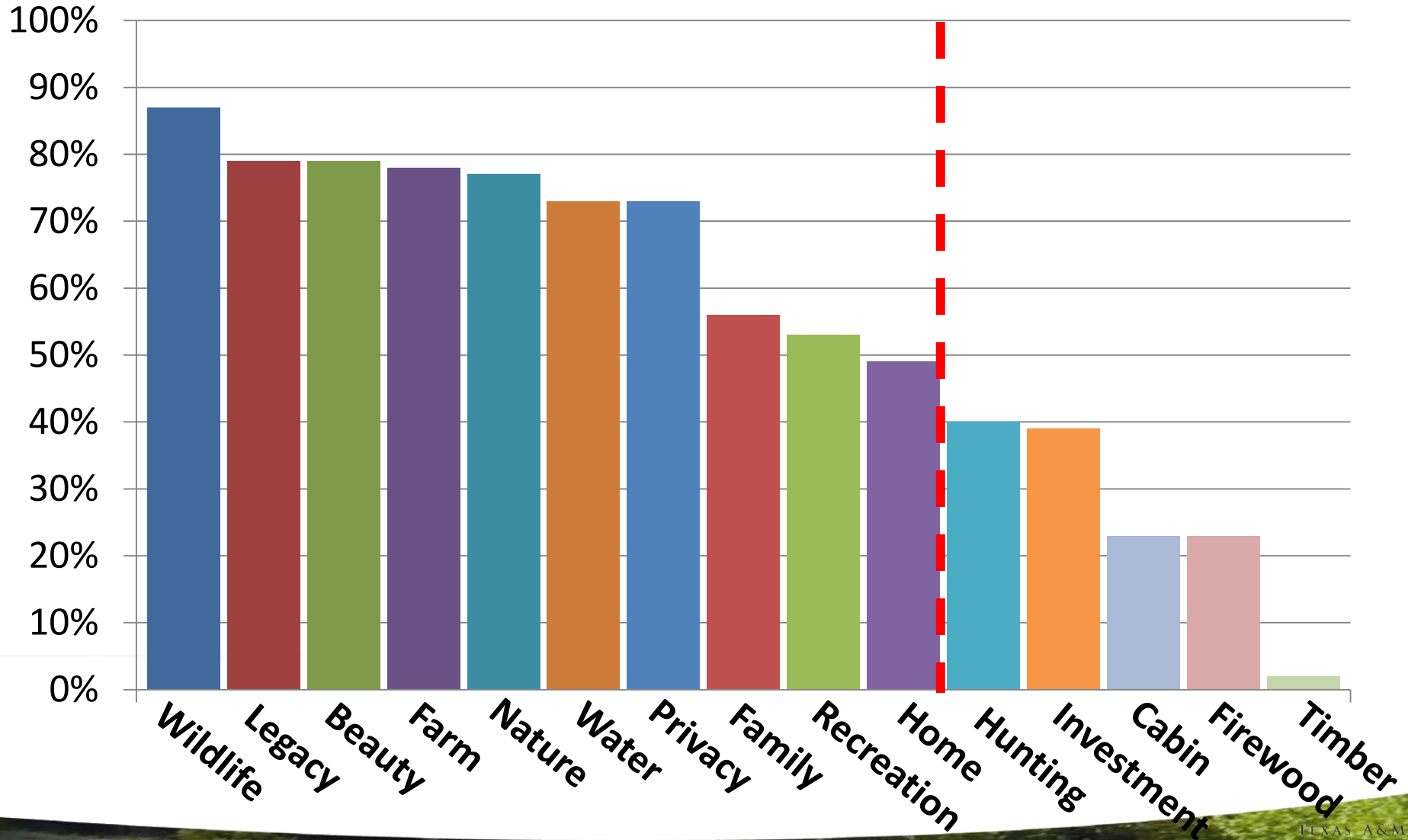
- Absentee ownerships
 - 45% of ownerships
- Part of farm
 - 42% of ownerships
- New ownerships (<10 yrs)
 - 25% of ownerships



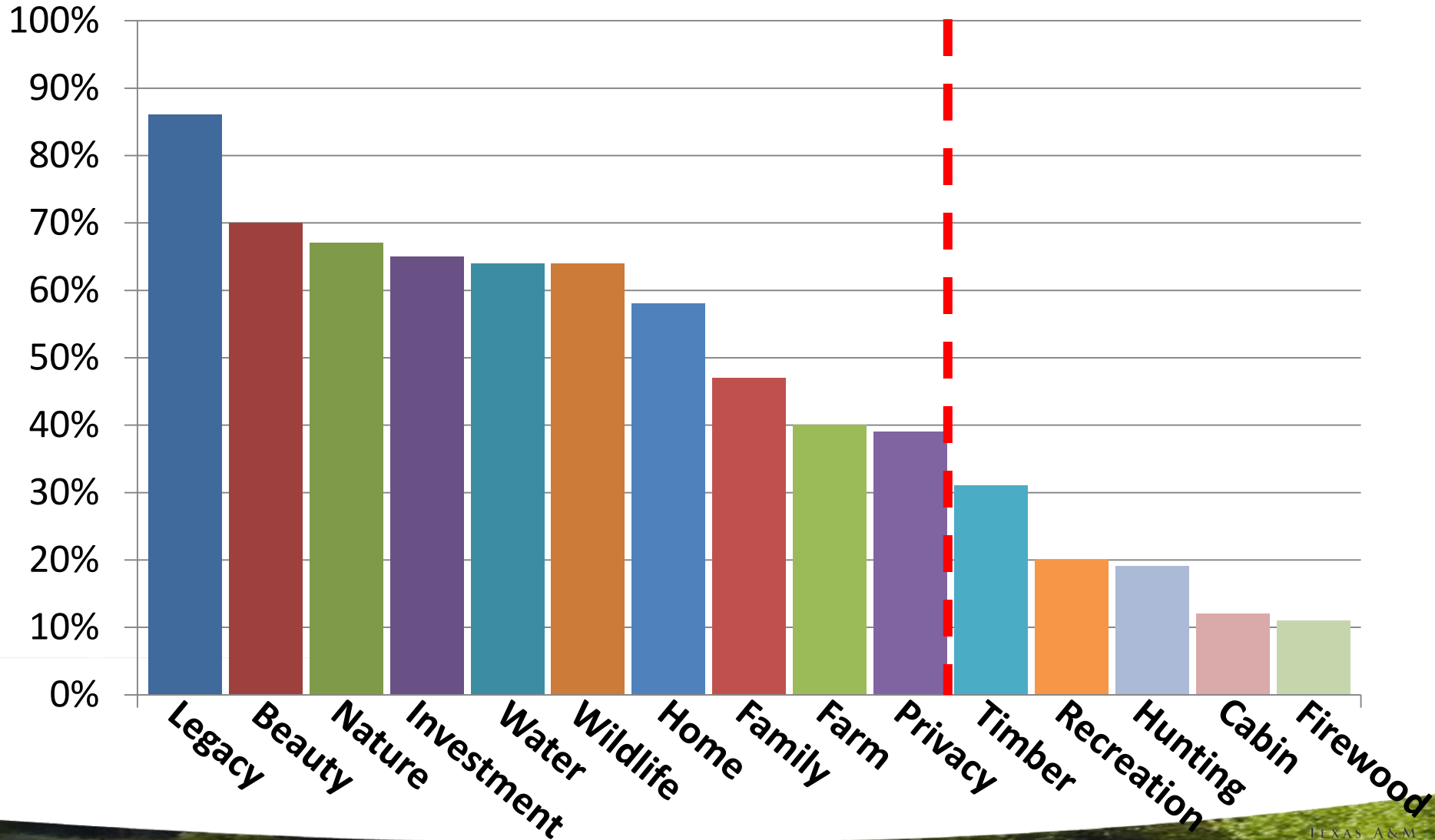
Size of Family Land Holdings in Texas



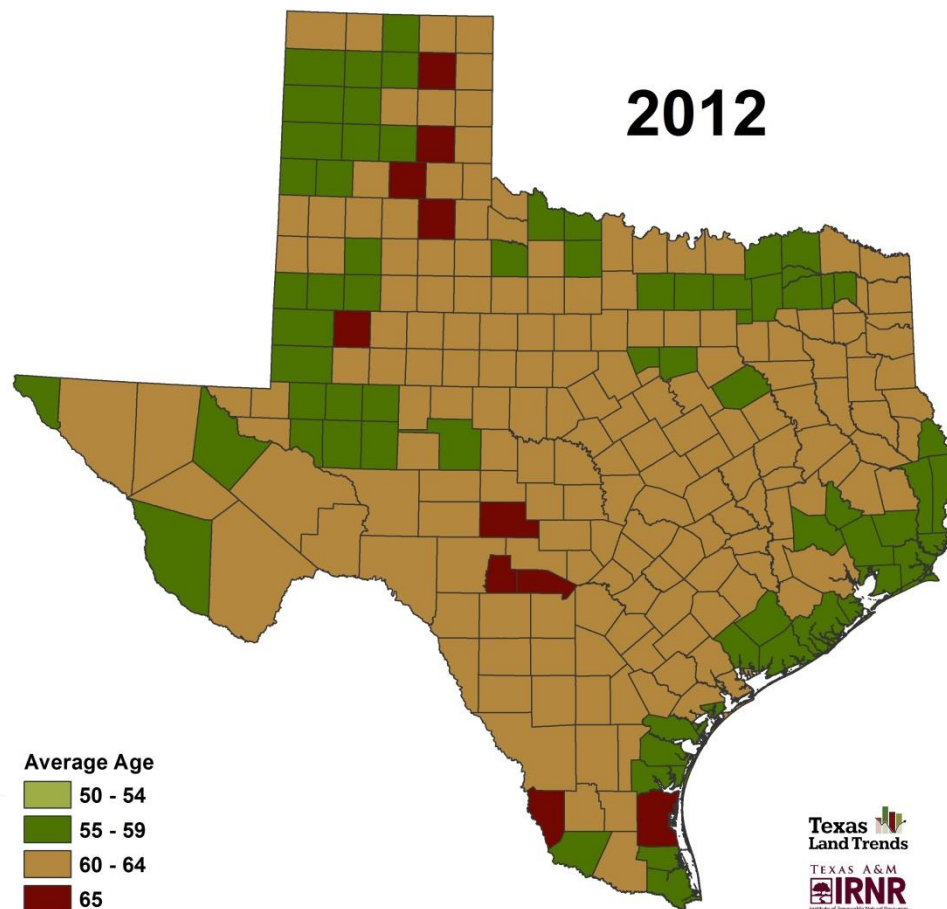
Reasons for Owning Land – West Texas



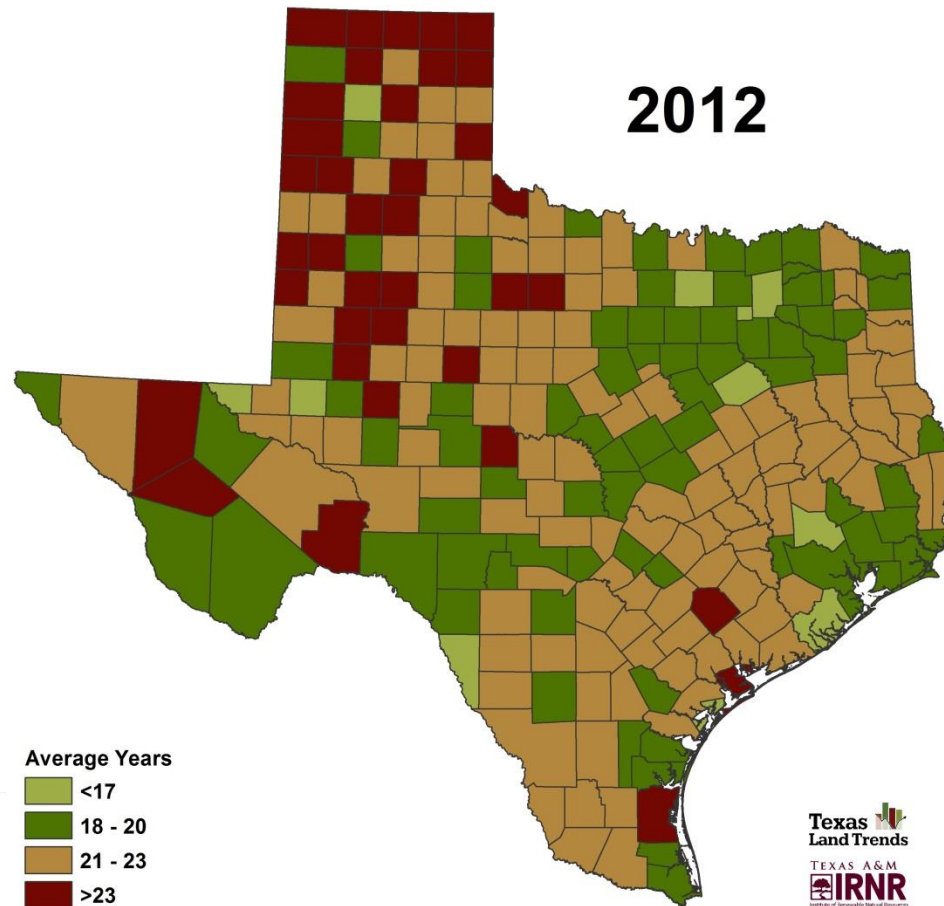
Reasons for Owning Land – East Texas



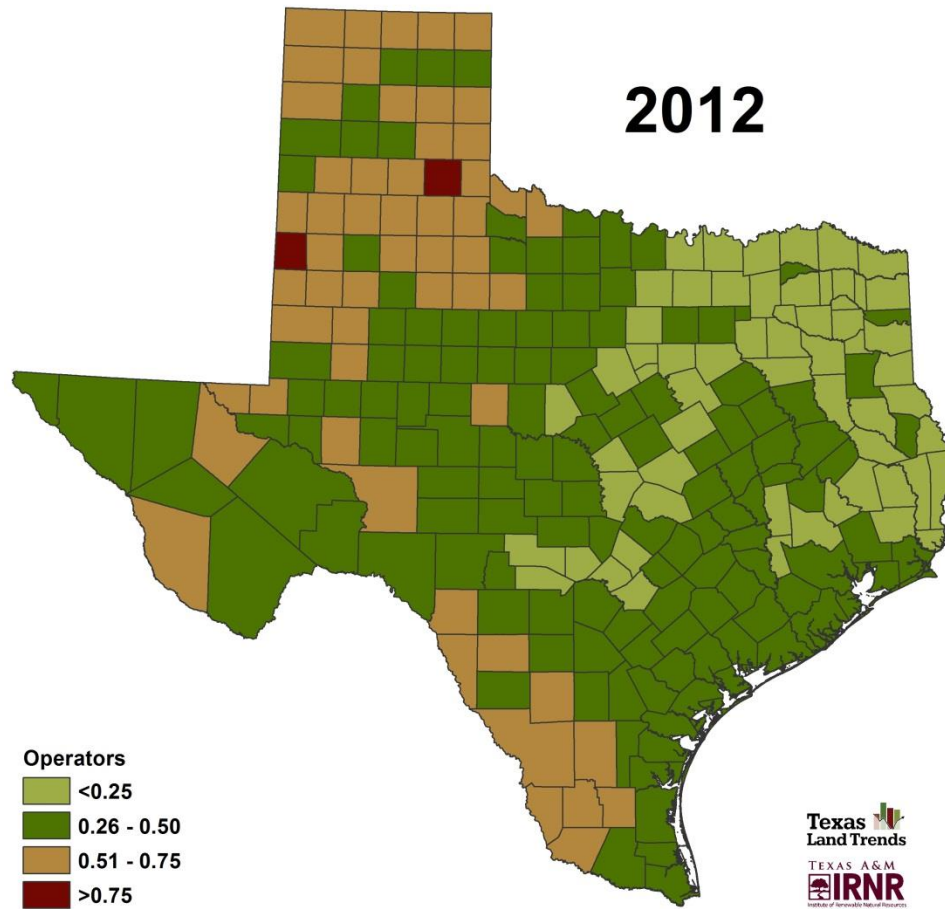
Landowner Average Age



Operator Years on Current Operation

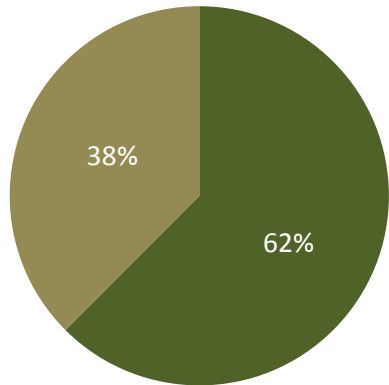


Absentee Operators (Ratio)

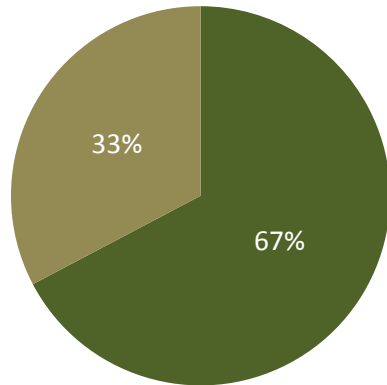


Absentee vs. Resident Landowners

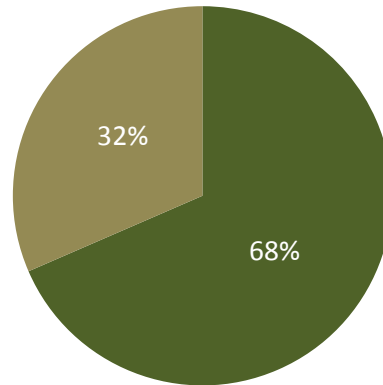
1997



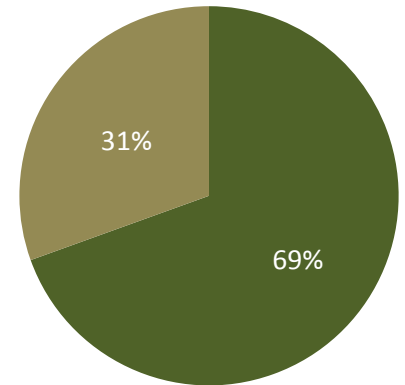
2002



2007

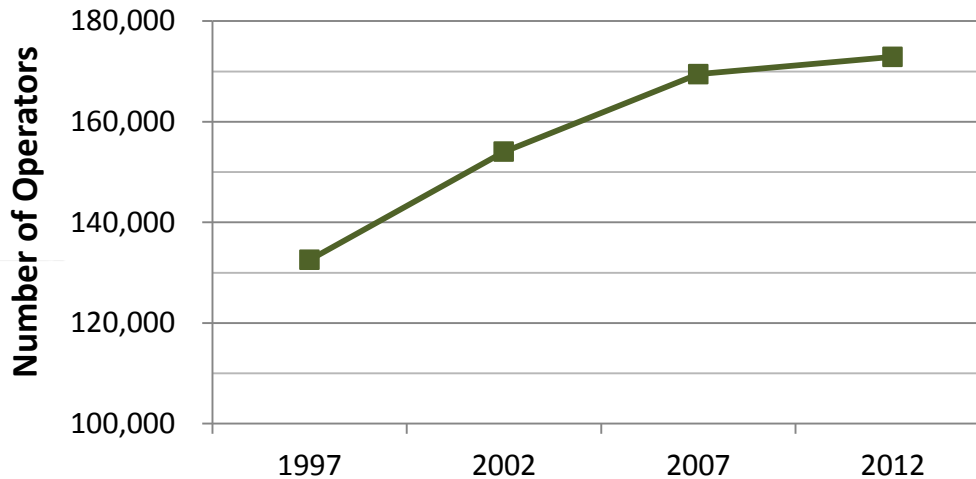


2012

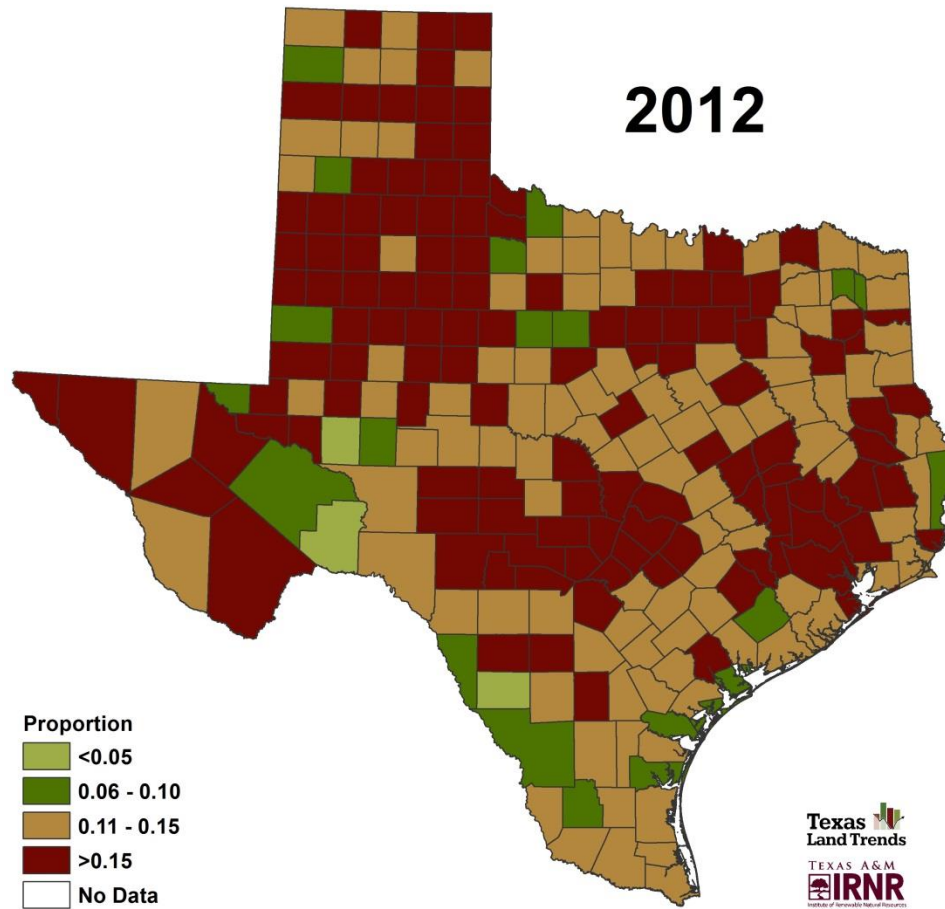


Absentee Landowner Resident Landowner

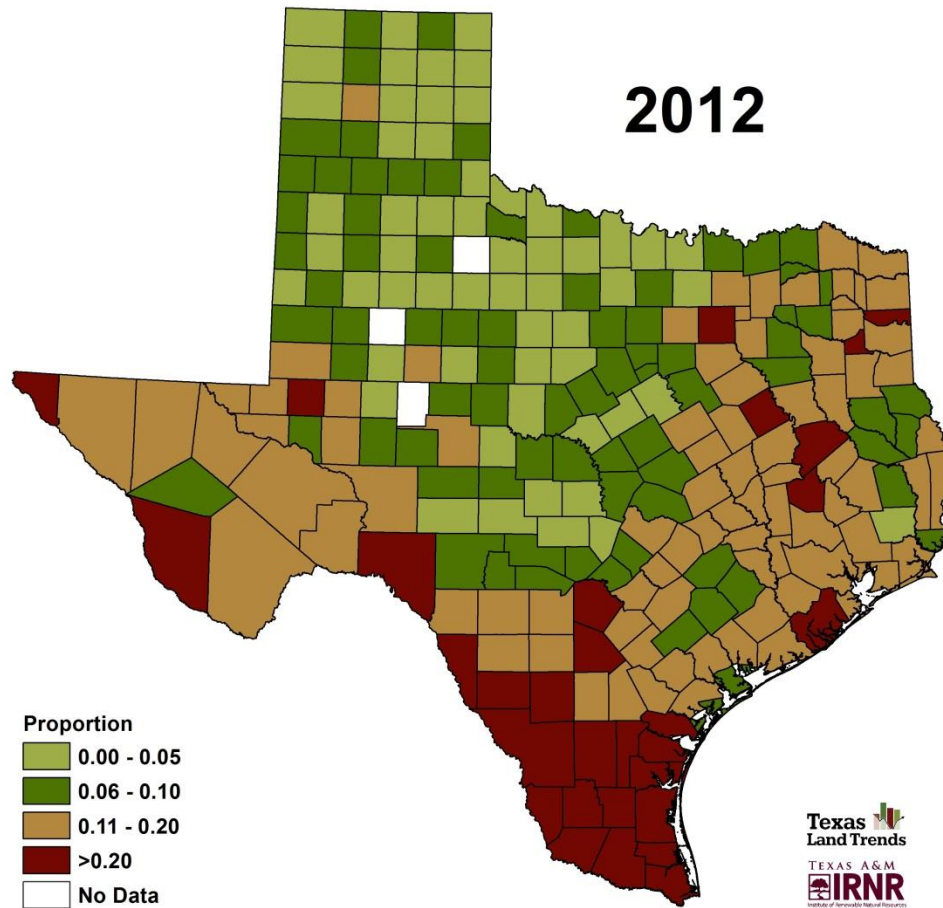
Resident Landowners



Female Operators (Ratio)



Minority Operators (Ratio)



Landowner Ethnicity (Number of Operators)

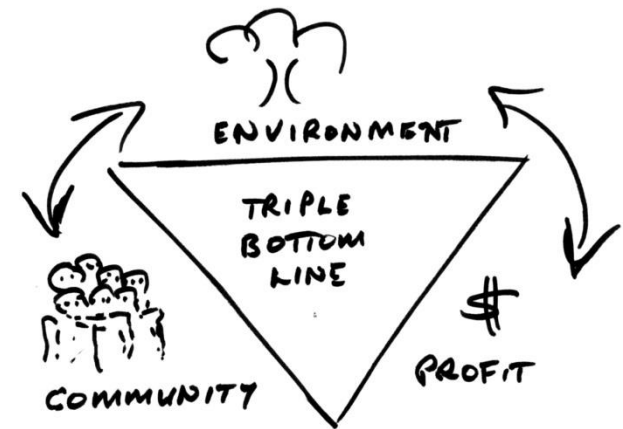
| | 2007 | 2012 | Percent Change |
|-------------------------|---------|---------|----------------|
| African American | 6,124 | 8,551 | 39.6% |
| Hispanic | 20,351 | 23,689 | 16.4% |
| White | 236,568 | 235,449 | -0.5% |
| Other | 4,686 | 4,782 | 2.0% |

Landowner Ethnicity (Number of Acres)

| | 2007 | 2012 | Percent Change |
|-------------------------|-------------|-------------|----------------|
| African American | 561,693 | 900,870 | 60.4% |
| Hispanic | 5,142,720 | 6,612,971 | 28.6% |
| White | 104,554,595 | 112,741,530 | 7.8% |
| Other | 733,251 | 694,266 | -5.3% |

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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