Meeting the Water Needs for Texans and Wildlife

TEXAS A&M AGRILIFE EXTENSION

Jim Cathey,
Extension Wildlife Specialist

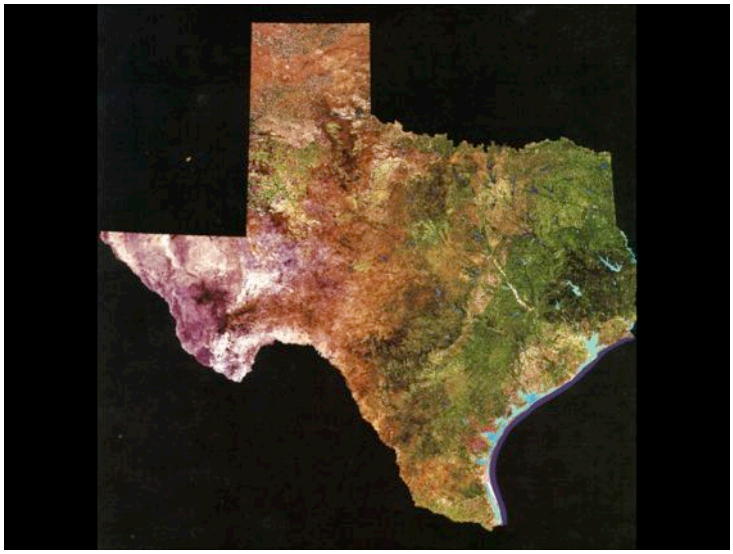

THE TEXAS
STOCKMAN AND FARMER

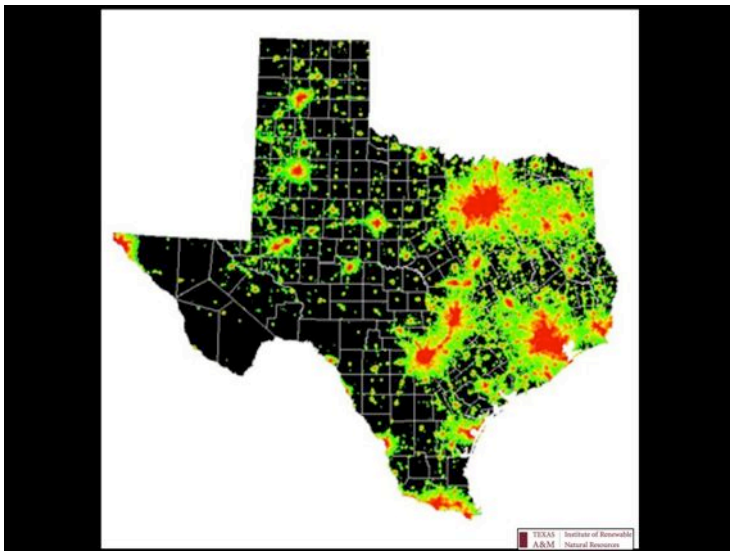
Some Splendid Colonization Propositions

	Per Acre
43,719 acres in McMullen County	$ 7.00
66312 acres in LaSalle County	6.00
10,000 acres nice land Chambers county	20.00
14,000 acres good land Kinney county	4.50
27,000 acres in Frio county	10.00

Much of above properties river front and on railroad, in best belt of Southwest Texas. Also have some fine small farms.

Leona Land Company,
UVALDE, TEXAS.





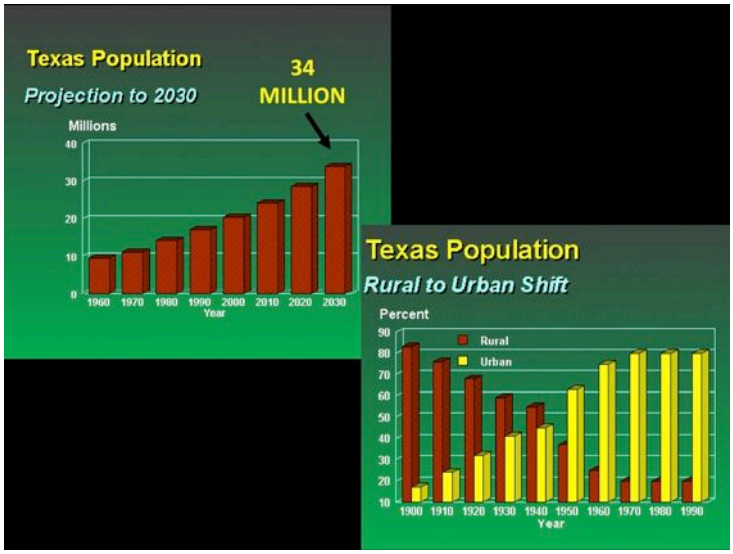
Show Me the Water!

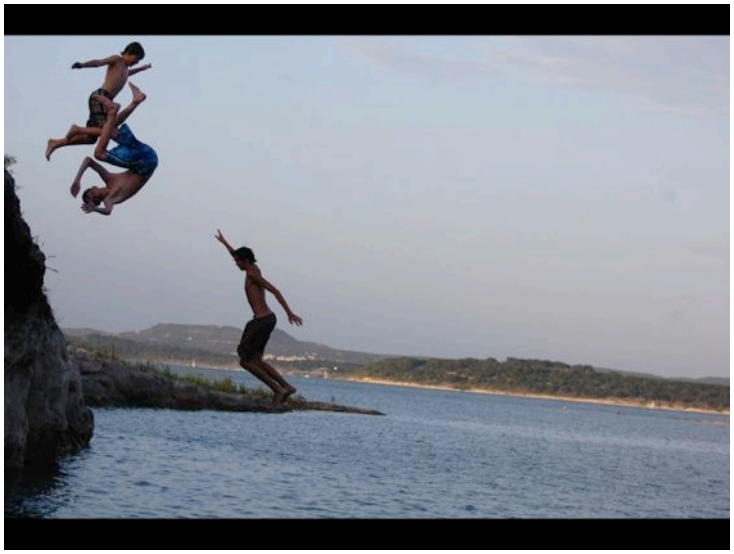
The primary message of the

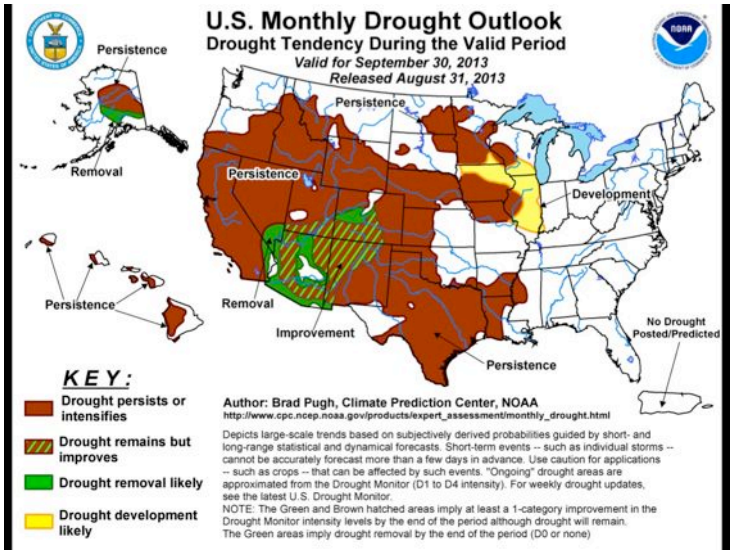
2012 State Water Plan is a simple one:

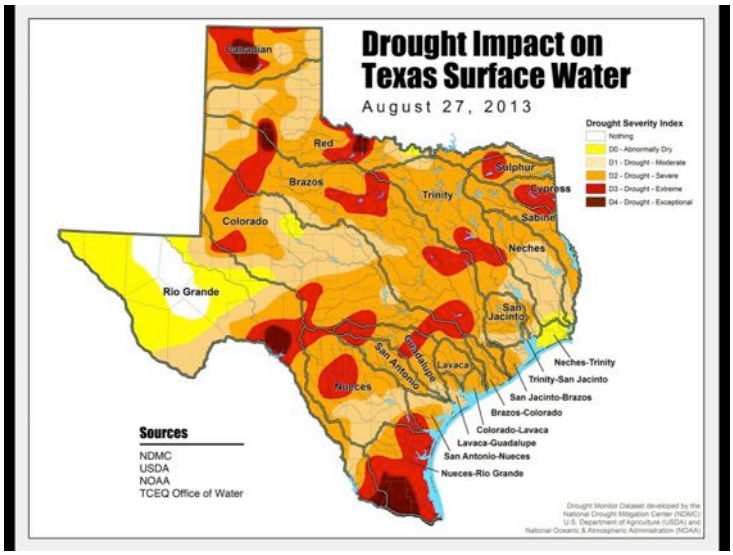
– In serious drought conditions, Texas **does not and will not** have enough water to meet the needs of its people, its businesses, and its agricultural enterprises.

Texas Water Development Board


Texas Population
Projection to 2030
34
MILLION
Millions
40
30
20
10
0
1960 1970 1980 1990 2000 2010 2020 2030
Year
Texas Population
Rural to Urban Shift
Percent
90
80
70
60
50
40
30
20
10
Rural
Urban
1900 1910 1920 1930 1940 1950 1960 1970 1980 1990
Year




U.S. Monthly Drought Outlook
Drought Tendency During the Valid Period
Valid for September 30, 2013
Released August 31, 2013
Persistence
Removal
Persistence
Persistence
Development
Persistence
Removal
Improvement
Persistence
No Drought
Posted/Predicted
KEY:
Drought persists or intensifies
Drought remains but improves
Drought removal likely
Drought development likely
Author: Brad Pugh, Climate Prediction Center, NOAA
http://www.cpc.ncep.noaa.gov/products/expert_assessment/monthly_drought.html
Depicts large-scale trends based on subjectively derived probabilities guided by short- and long-range statistical and dynamical forecasts. Short-term events -- such as individual storms -- cannot be accurately forecast more than a few days in advance. Use caution for applications -- such as crops -- that can be affected by such events. "Ongoing" drought areas are approximated from the Drought Monitor (D1 to D4 intensity). For weekly drought updates, see the latest U.S. Drought Monitor.
NOTE: The Green and Brown hatched areas imply at least a 1-category improvement in the Drought Monitor intensity levels by the end of the period although drought will remain.
The Green areas imply drought removal by the end of the period (D0 or none)


Drought Impact on
Texas Surface Water
August 27, 2013
Drought Severity Index
Nothing
D0 - Abnormally Dry
D1 - Drought - Moderate
D2 - Drought - Severe
D3 - Drought - Extreme
D4 - Drought - Exceptional
Canadian
Red
Brazos
Colorado
Rio Grande
Sulphur
Trinity
Cypress
Sabine
Neches
San Jacinto
Guadalupe
San Antonio
Lavaca
Nueces
Neches-Trinity
Trinity-San Jacinto
San Jacinto-Brazos
Brazos-Colorado
Colorado-Lavaca
Lavaca-Guadalupe
San Antonio-Nueces
Nueces-Rio Grande
Sources
NDMC
USDA
NOAA
TCEQ Office of Water
Drought Monitor Dataset developed by the National Drought Mitigation Center (NDMC), U.S. Department of Agriculture (USDA) and National Oceanic & Atmospheric Administration (NOAA)

Quiz: Which is the only natural reservoir in Texas

A. Somerville
B. Toledo Bend
C. Livingston
D. Caddo

Bonus question:
Which reservoir is in the Trinity River Basin?

Quiz: Which of the following are ecosystem services

A. Clean air
B. Clean water
C. Outdoor recreation
D. All of the above

Quiz: Which Landscape is Better Prepared to Capture Rainfall?

- A
- B

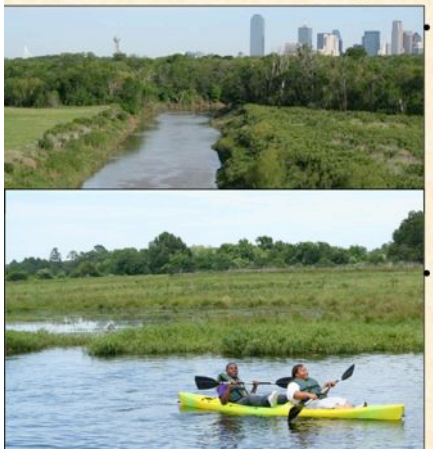
Trinity Waters
land. water. life.

- Dedicated to
  - Improving the quality of life
  - Economic sustainability
  - Ecological integrity

  Within the Trinity River Basin

Support of 30 conservation organizations

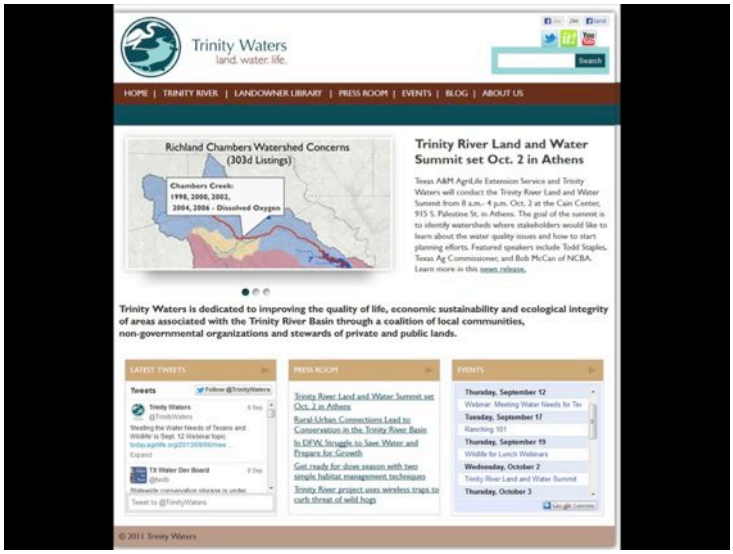
Connecting People with the Trinity River



- Promote land stewardship practices
  - Improve ag production
  - Increase wildlife populations
  - Greater recreational opportunities
- Improve water resources
  - Allow for land-water interactions
  - Reduce pollutants

Developing Resources

- Web-presence
  - Social Media
  - Videos
- Land Mapping
  - TRIMS
- Publications
- Outreach Programs
  - Youth
  - Adult



Delivering Information to Landowners and the Public

- Social Media

Facebook

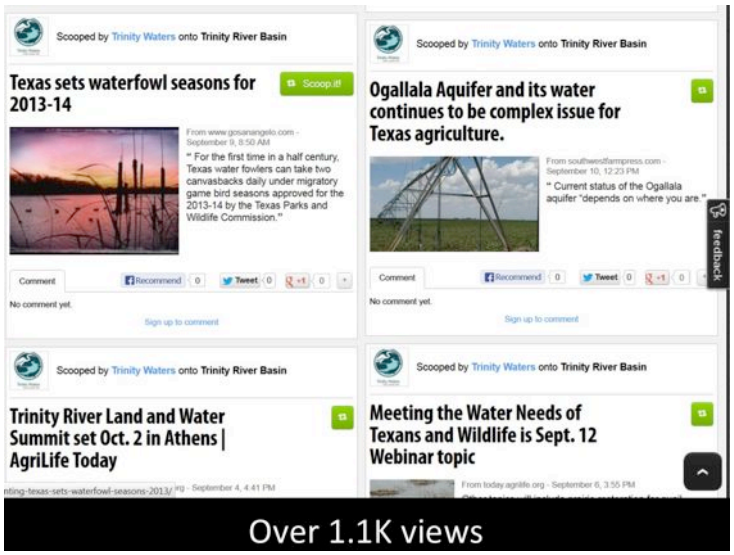
Twitter

Scoop.it!

WFSC AgriLife

Wild Wonderings Blog

Photos



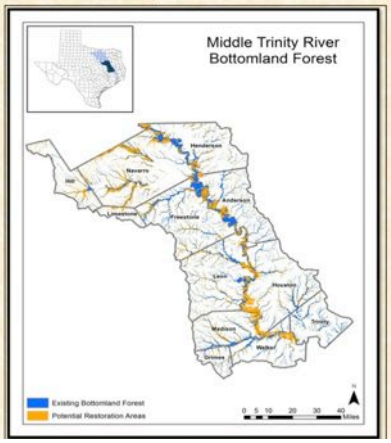
Over 1.1K views

Trinity River Information Management System (TRIMS)

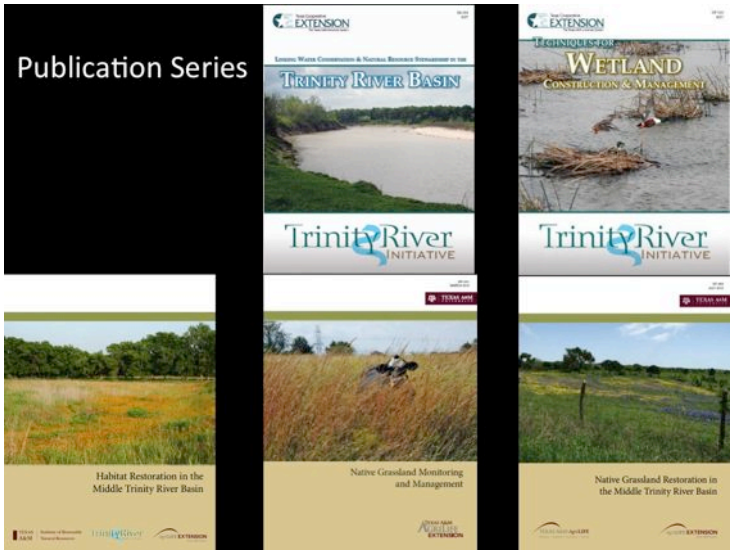
TEXAS A&M Institute of Renewable Natural Resources

- Accessible
- Interactive
- Watershed scale (local to regional)
- Soils, vegetation, elevation, stream data
- Restoration potential

trims.tamu.edu

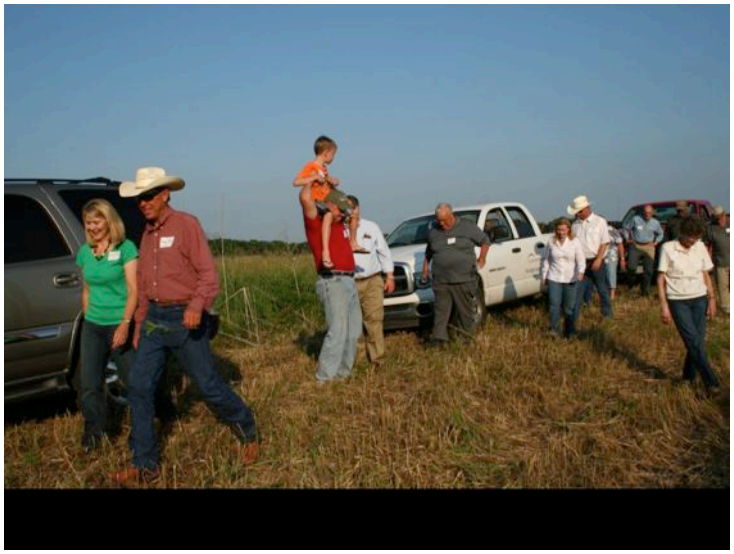


Publication Series



Delivering Information to Landowners and the Public

- Youth Education
  - Learning Across New Dimensions in Science (L.A.N.D.S.)
  - Wide assortment of teachers and natural resource partners
  - Outdoor classrooms to teach students the value of natural resource conservation



Best Management Practices

- Grazing
- Prairies
- Wetlands

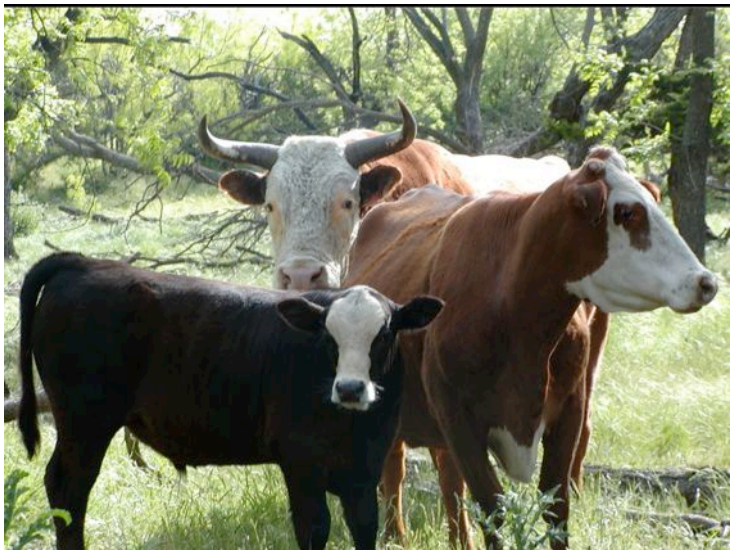
Livestock Compatibility with Wildlife

- Know how much forage is in the pasture
- Low to moderate stocking density
- Good cross-fencing and water distribution

A

Quiz: Which pasture will yield more pounds of forage?

B



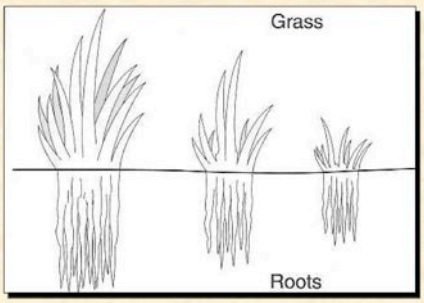
A

Quiz: Which pasture is prepared to capture and hold rainfall?

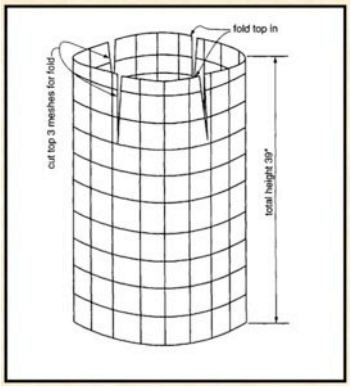
B

Take Half / Leave Half

Really means take only 25%



Visualizing Forage Use



Land Use Effects on Water

Bunchgrasses

- Surface runoff = 24%
- Infiltration = 75%
- Low input costs
- Wildlife and livestock value

Sodgrasses

- Surface runoff = 45%
- Infiltration = 54%
- Higher input cost fertilizers
- Livestock value

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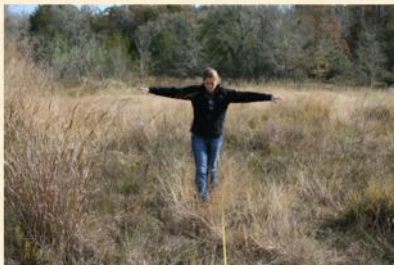
Conservation Example

A Strategic Approach to Bobwhite Recovery in the Western Trinity River Basin

Jay Whiteside
Technical Guidance Biologist
Texas Parks and Wildlife Department

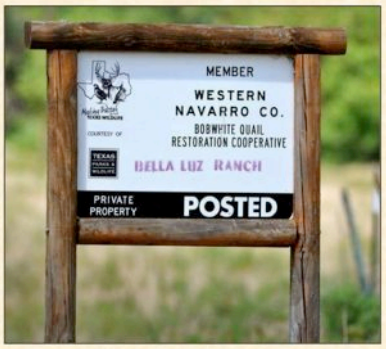
Nesting Cover Recommendations

- Target = ~ 400 suitable nest clumps/acre
  - Suitable nesting sites
    - bunch grasses; size of a basketball
    - prickly pear; size of a hula hoop



Wildlife Management Associations

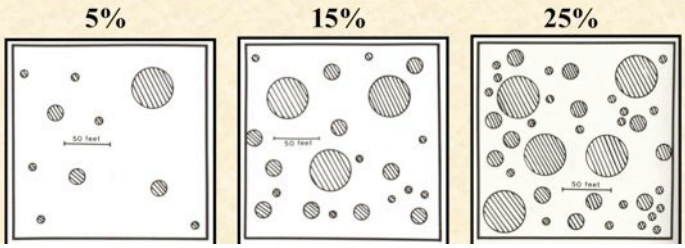
- Landowners working together under guidance of a biologist
- Large area under similar management strategy
- Lessens the effect of fragmentation
- 10 in middle basin for 95,000 acres



Prairie Restoration– Tools of the Trade

Managing
Loafing and Escape Cover

- Strive for good distribution
  - A soft ball's throw to nearest cover
- 5% - 25% brushy cover



Loafing Cover Examples

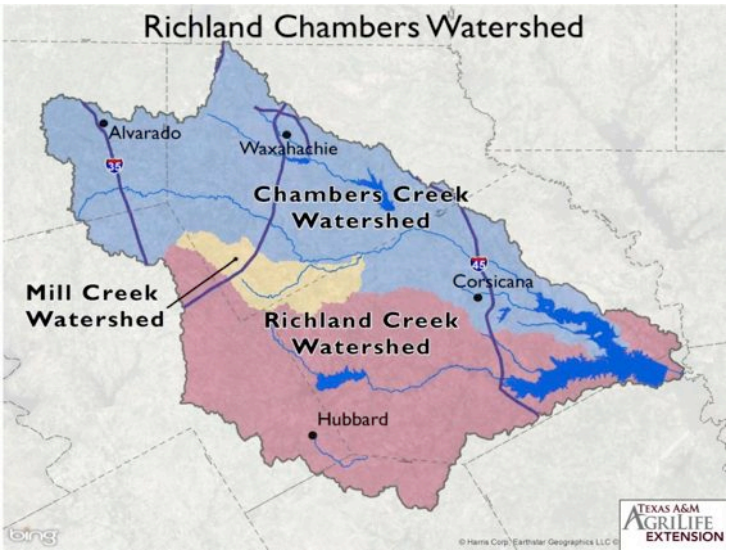
- fence rows, field corners, windbreaks

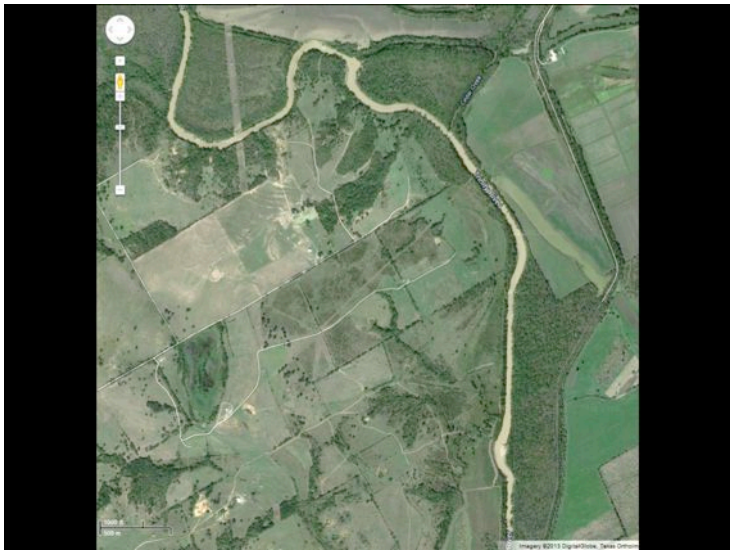
Conservation Example

Chambers Creek Water Quality Initiative

- Joint project (2012) with NRCS and local SWCDs
- $8.5 million invested with landowners
- to carry out conservation practices that benefit water quality and soil health
- And thirsty Texans in Urban and Rural areas

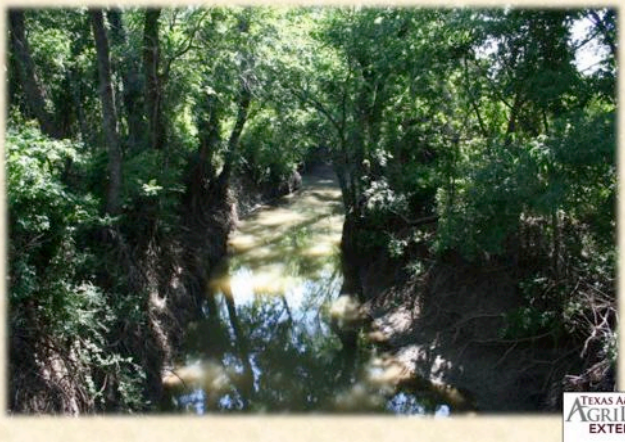
NRCS Natural Resources Conservation Service





Land Use Effects on Water

- Roots anchor soil and reduce flood damage



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Land Use Effects on Water

- Maintain vegetation in riparian areas
  - Reduces erosion, benefits water and wildlife

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Land Use Effects on Water

- Riparian soils can hold more water and greater forage production can be periodically grazed

Conservation Example
Wetlands for Water Treatment

- Richland Creek WMA
  - TPWD and Tarrant Regional WD
  - 1,730 acres, 109 MGD
- John Bunker Sands Wetlands Center
  - North TX Municipal WD
  - 2,100 acres
  - 102,000 acre/ft per year
- Rural-urban connection

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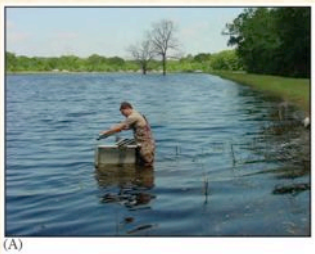
Location and Land Survey

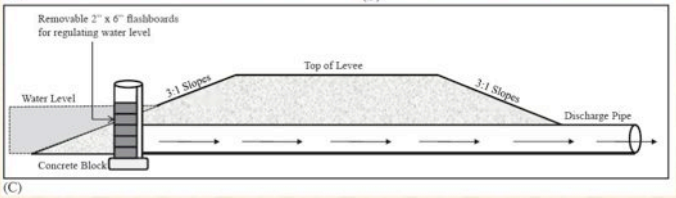
- Evaluate topography
  - Contours of 1 ft accuracy are important
  - Contact NRCS, land surveyor or engineering personnel

Flashboard Risers



(A)

(B)



(C)

Plant Diversity is Important

Funding by

Soil
Water
TSSWCB
Texas State Soil and Water Conservation Board