All Things Trinity, All Things Conservation

Where We've Been

- History of the river
- Water quality problems and policy changes

TEXAS A&M AGRILIFE EXTENSION

How much of the Texas population depends on the Trinity River?

A. 10%

B. 20%

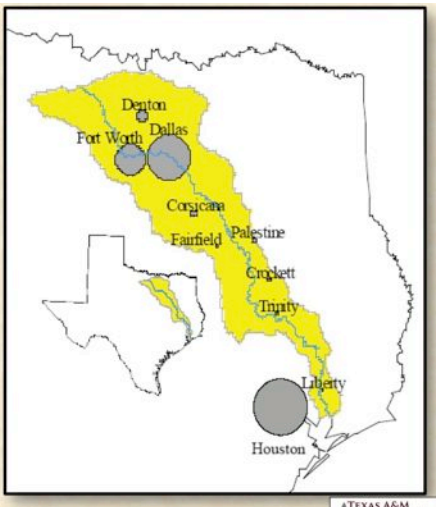
C. 40%

D. 75%

TEXAS A&M AGRILIFE EXTENSION

Trinity Key Points

- Supplies water to ~45% of Texas population
- Connects D/FW to Houston
- 512 miles long, 1,983 miles of tributaries
- Rural land covers 75% of 18,000 square miles (7% of Texas)
- Municipal water use is 80%



TEXAS A&M AGRILIFE EXTENSION

History of Trinity River

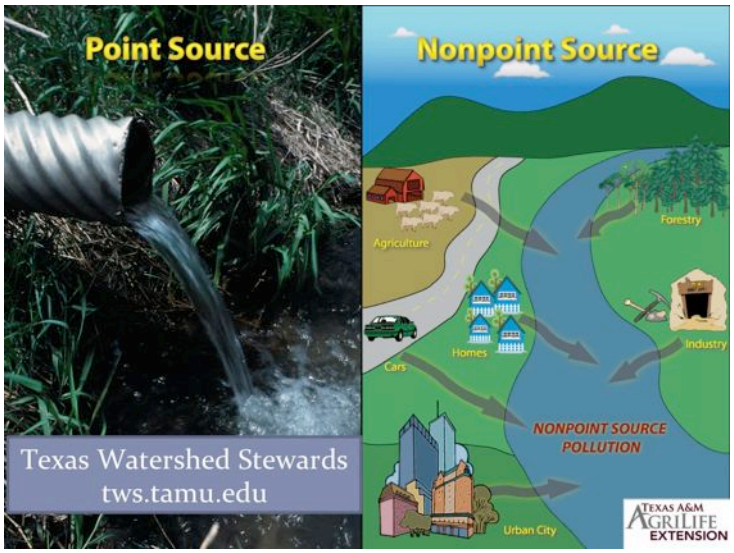
- Navigation projects in mid to late 1800's changed some parts of river
- Pollution from slaughterhouses, industries, sewage from D/FW and agricultural chemicals
- U.S. Public Health Service called river "septic" in 1960's

Pig's blood from slaughterhouse entering Trinity River in Dallas, March 2011

TEXAS A&M AGRILIFE EXTENSION

Clean Water Act

- Federal Clean Water Act (CWA, 1972, 1977) created to "Restore and maintain chemical, physical, and biological characteristics of nation's waters."
- Requires states to set water quality standards and designated uses for streams and lakes.
- Designated uses include Public Water Supply, Aquatic Life, Contact Recreation, and Fish Consumption.
- CWA requires states to assess quality of surface water (i.e. whether the water meets state-set water quality standards) and report to the EPA.



State Agencies

Texas Commission on Environmental Quality

- Sets water quality standards
- Manages point and urban nonpoint source programs

Texas State Soil and Water Conservation Board

- Manages nonpoint source programs for agricultural lands

What does the 303(d) list have on it?

A. Water rights diversions
B. Impaired water bodies
C. Sources of water pollution
D. Best hunting spots

Surface Water Quality Standards

- Every 2 years, the TCEQ must report the extent to which each water body meets the state's surface water quality standards:

Texas Integrated Report	•Describes status of ALL surface water bodies in state that were evaluated, tested, and monitored in recent 7 years
CWA 303(d) List	•Identifies ALL "impaired" surface water bodies not meeting criteria for designated uses

Where We Are

- Current water quality issues

Water Quality

- 2012 Water Quality Inventory and CWA 303(d) List
  - 40 segments "impaired"
  - 71 segments of concern
  - 11 segments delisted from 303(d)
  - 3 segments added
  - 25 of 40 impaired segments due to bacteria

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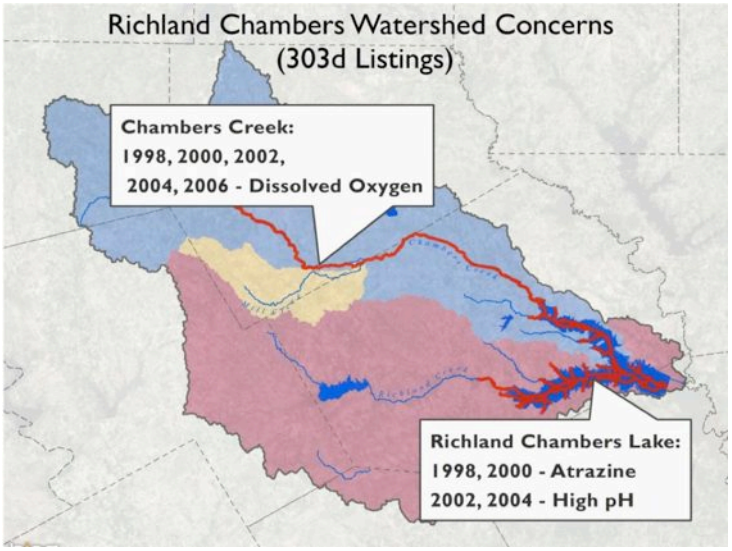
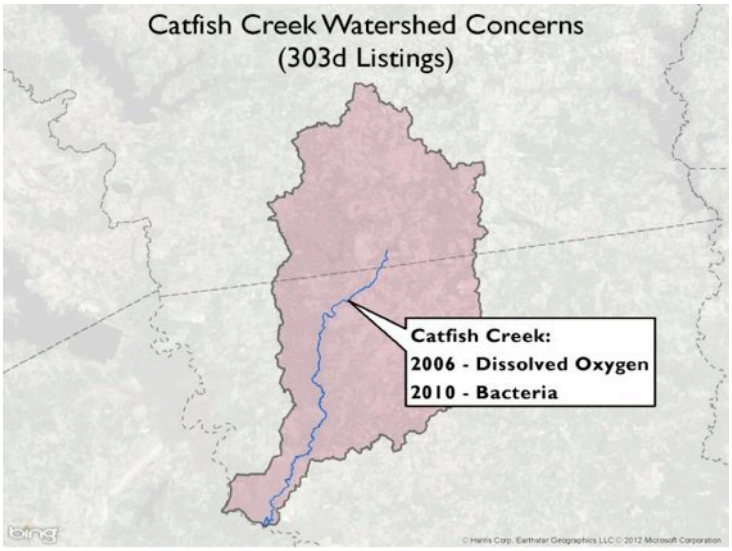
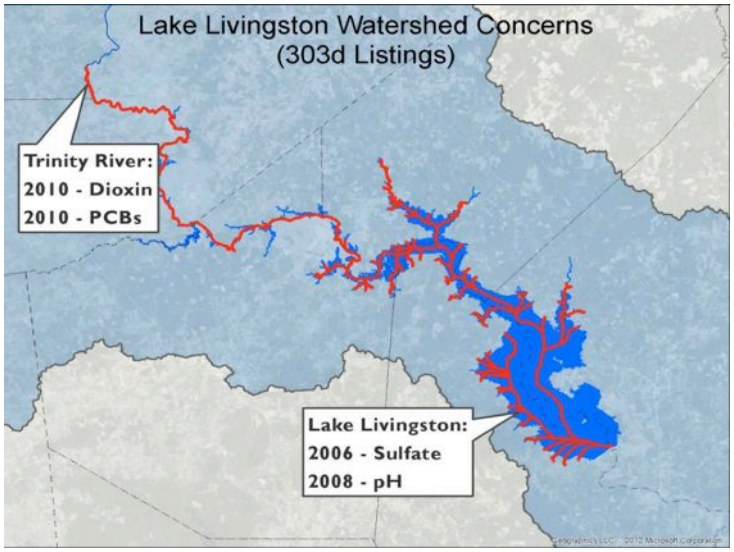






Texas A&M AgriLife Extension

Where We're Headed

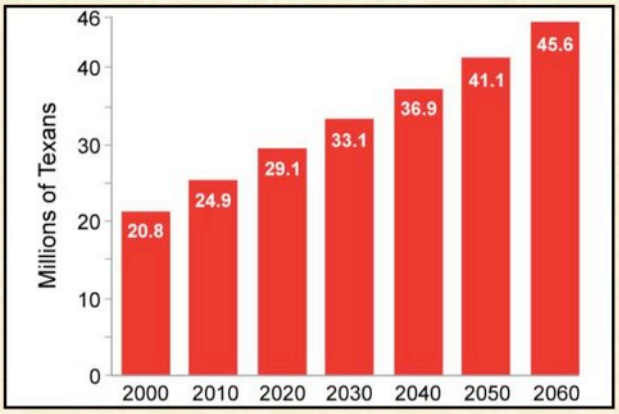
- Challenges That Lie Ahead
- Working To Change Directions

Texas A&M AgriLife Extension

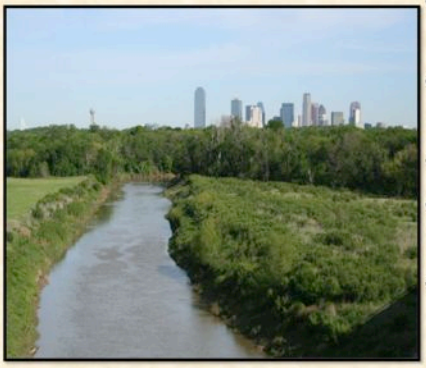
All these challenges face the Trinity River basin EXCEPT:

A. Fragmentation
B. Urbanization
C. Drought
D. Population Growth

Texas' Projected Growth



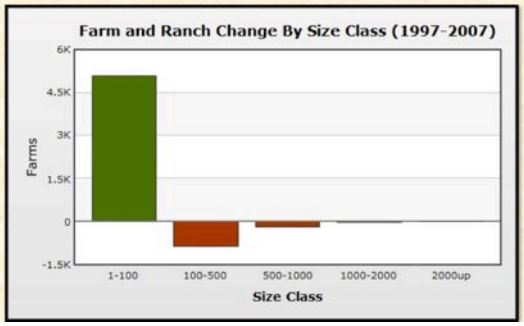
The Challenges



- Rapidly increasing population
- Poor water quality
- Habitat loss
- Declining wildlife populations
- Reduced recreational opportunities

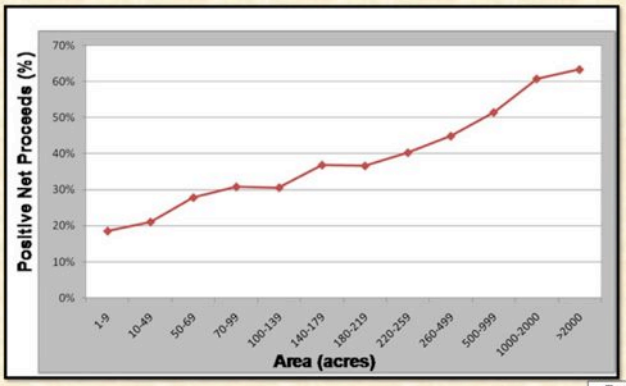
Fragmentation

- 5,000 new properties in the 1-100 size class
- Resulting problems
  - Loss of sustainable wildlife habitat
  - Reduced agricultural productivity

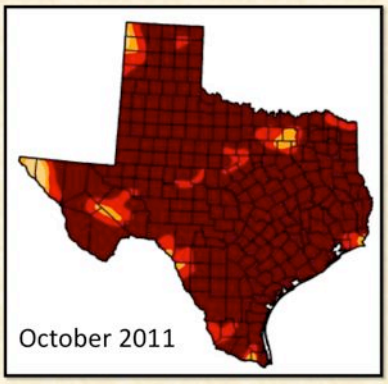


Fragmentation

- Reduced economic sustainability for landowners



Drought



- Plant growth very reduced
- Hampers livestock production and overgrazing common
- Crop losses
- Municipal watering restrictions
- Loss of recreation

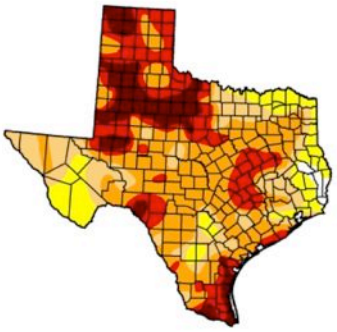
U.S. Drought Monitor

Texas

July 2, 2013
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	1.23	98.77	87.13	68.67	32.63	12.20
Last Week (06/25/2013 map)	4.99	95.01	84.00	60.59	30.10	11.27
3 Months Ago (04/02/2013 map)	1.40	98.60	88.21	65.44	32.95	11.81
Start of Calendar Year (01/01/2013 map)	3.04	96.96	87.00	65.39	35.03	11.96
Start of Water Year (09/25/2012 map)	9.13	90.87	78.73	57.41	24.91	5.18
One Year Ago (06/26/2012 map)	4.08	95.92	73.49	34.20	7.20	0.00



Intensity:
D0 Abnormally Dry
D1 Drought - Moderate
D2 Drought - Severe
D3 Drought - Extreme
D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://droughtmonitor.unl.edu

Released Wednesday, July 3, 2013
Matthew Rosencrans, NOAA/NWS/NCEP/Climate Prediction Center

Questions?

Trinity River Basin Restoration Initiative

- Governor's 2006 Announcement
- Improve water quality by habitat restoration
- Build capacity of Trinity Waters
- Foster natural resources conservation culture

Purpose

- Landowners at the forefront
  - Neighbor working with neighbor
  - Proactive stance can prevent future, unnecessary regulation
  - Magnify conservation dollars
  - Connect urban resources

Trinity Waters
land. water. life.

Mission

Improve the quality of life, economic sustainability and ecological integrity of areas associated with the Trinity River Basin through a coalition of local communities, NGOs and stewards of private and public lands.

Goals

- Connect rural land stewardship to urban water resources
- Establish partnerships among landowners, conservation organizations, private companies, and agencies

Goals

- Promote land stewardship practices
  - Improve ag production
  - Increase wildlife populations
  - Greater recreational opportunities
- Improve water resources
  - "Land Sponge"
  - Reduce pollutants

Delivering Information to Landowners and the Public

- Website
  - Landowner Library with over 400 natural resource publications and links
  - Highlights projects, news, and events within the Trinity River Basin

Delivering Information to Landowners and the Public

- Social Media

Facebook

Twitter

Scoop.it!

WFSC AgriLife

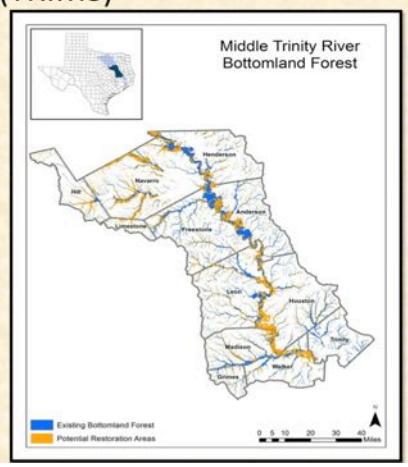
Wild Wonderings Blog

Photos

Trinity River Information Management System (TRIMS)

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

trims.tamu.edu



Which of these is NOT an example of a watershed protection strategy in Texas?

A. Watershed Protection Plan

B. Recreational Use Attainability Analysis

C. Environmental Calibration Model

D. Total Maximum Daily Load

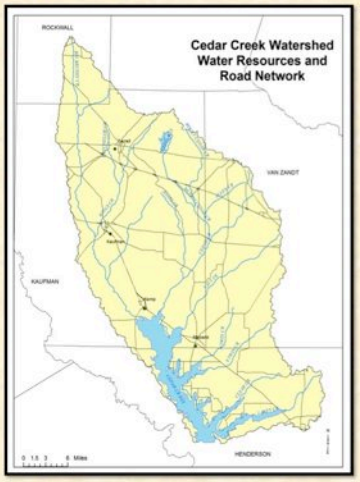
Watershed Protection Strategies

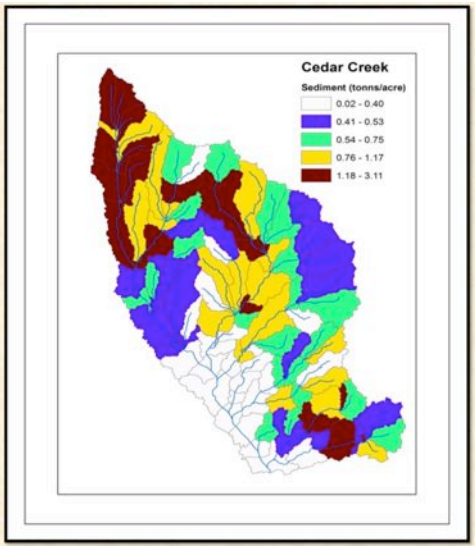
Total Maximum Daily Load	*Watershed Protection Plan*
• Regulatory	• Voluntary, community-driven
• Focuses only on pollutant(s) causing impairment	• Holistic – focuses on all potential pollutant sources in watershed
• Water body ***always*** on 303(d) list	• Water body ***usually*** *(not always)* always on 303(d) list

Both *identify management practices to improve and protect water quality and watershed health*

Cedar Creek Reservoir

- pH and chlorophyll-a concerns led to modeling efforts in 2003
- Determine pollutant loading from land uses and prioritize areas for BMP implementation
- Goal of 30% reduction in phosphorus with 13 BMPs
- Stakeholders include cities, landowners, agencies, WWTPs





Recreational Use Attainability Analysis

- Determine recreational use of water body
- Look at usability of water body and assess historical use
- Four categories
  - Primary
  - Secondary 1
  - Secondary 2
  - Noncontact
- Each category has different water quality standard

Rec Uses	*E. Coli* mean (colonies/100 ml)
2000 Standards	
Contact Rec	126
Noncontact Rec	605
2010 Standards	
Primary Contact	126
Secondary Contact 1	630
Secondary Contact 2	1030
Noncontact	2060

What Can I Do?

- Set conservation goals for your land
- Contact TPWD Biologists, County Extension Agents, NRCS for guidance
- Contact local officials and get involved with your neighbors

TEXAS A&M AGRILIFE EXTENSION

Restoration of the Trinity Basin is a Common Link Between Urban and Rural Texans





Funding by

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