

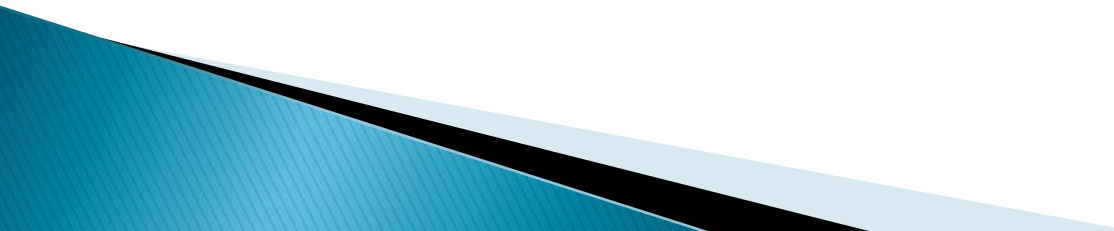
# Why and How We Got Here

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Texas State Soil and Water Conservation Board

Double Bayou Watershed Partnership  
May 21, 2013  
Hankamer, TX

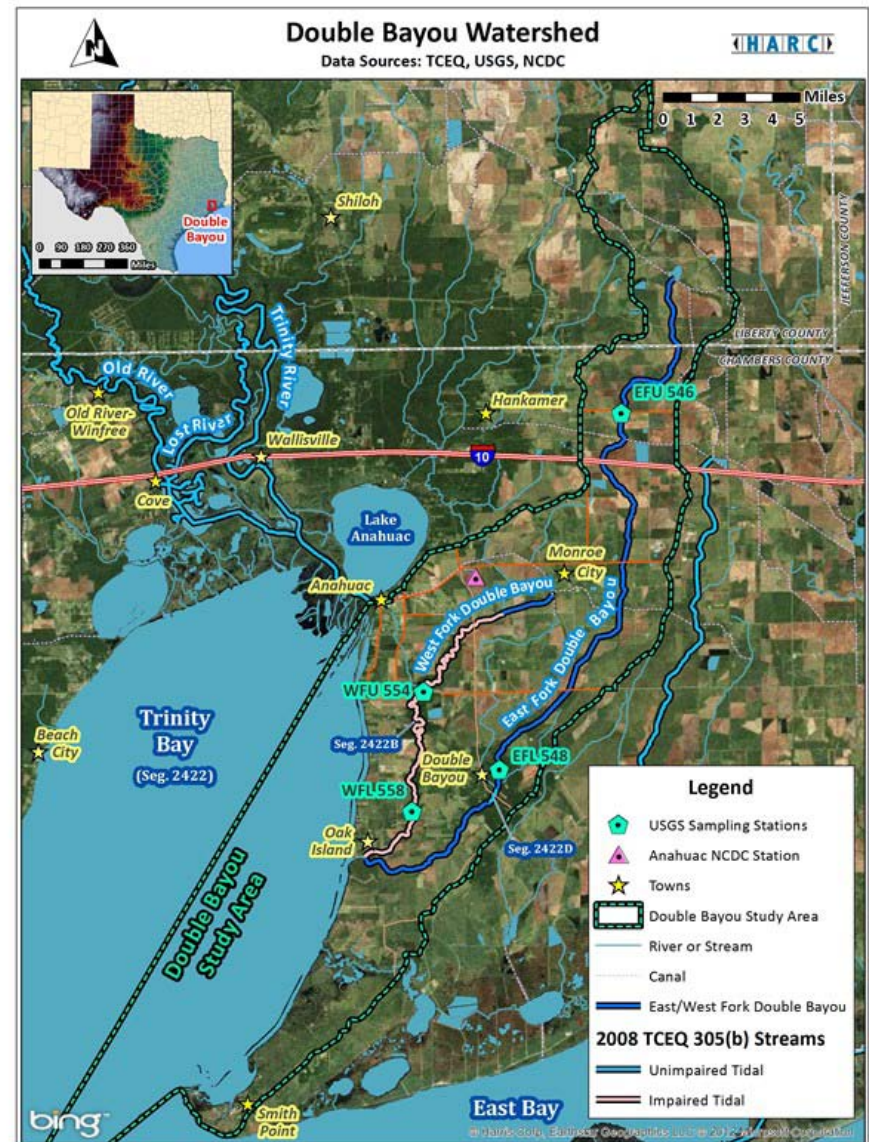


# Outline

- ▶ What is the Double Bayou Watershed?
  - ▶ What do we already know about Double Bayou?
  - ▶ Why should we care about Double Bayou?
  - ▶ What are we going to do about the issues surrounding Double Bayou?
- 

# Double Bayou Watershed

- ▶ Located northeast of Galveston Bay in Chambers County
- ▶ 138 square miles
  - Liberty and Chambers Counties
- ▶ Made up of two segments/forks:
  - West Fork and East Fork
- ▶ Largely non-urbanized
- ▶ Watershed characteristics include:
  - Oil and Gas wells
  - Agricultural lands
  - Extensive network of irrigation canals/channelized waterways



# What do we know about Double Bayou?

- ▶ Made up of two segments
  - 2422B, West Fork–
    - Listed as impaired for dissolved oxygen (DO) and bacteria since 2004
  - 2422D, East Fork–
    - Listed as impaired for dioxins and PCBs in edible fish tissue, as well as concerned for depressed DO

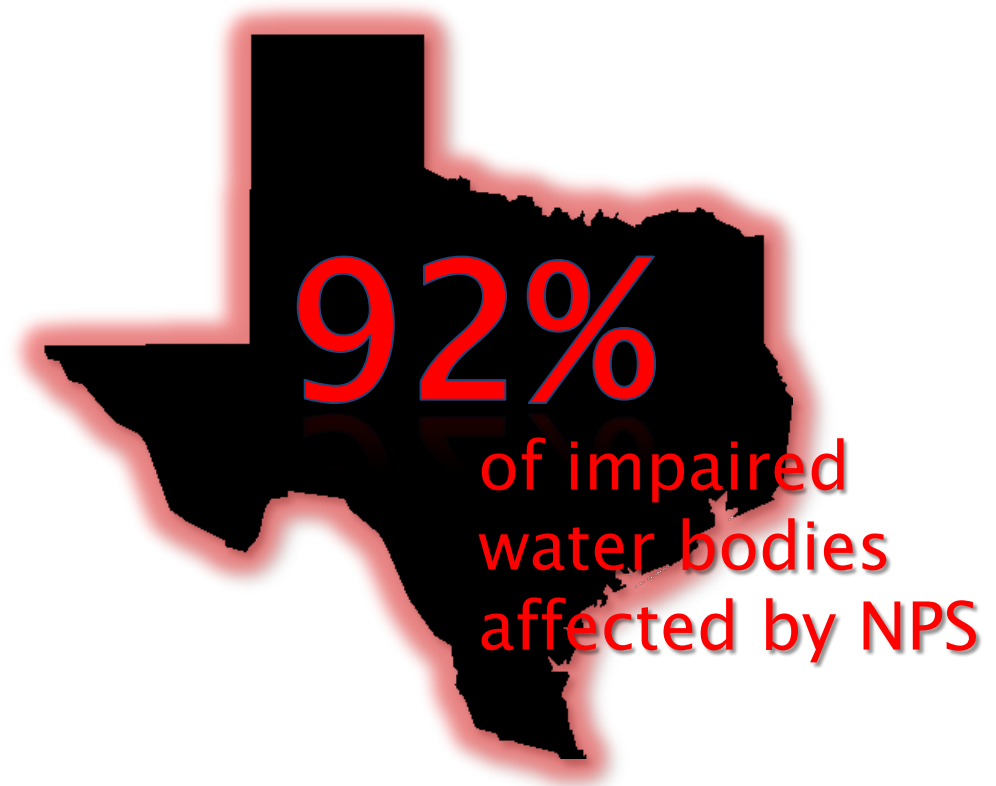


# Impairments and Concerns


- ▶ Bacteria (Contact Recreation)
  - Test for indicator bacteria: *E.coli* and enterococci
  - Cause for human health risk
- ▶ Dissolved Oxygen (Aquatic Life)
  - Levels below 3 ppm are stressful to aquatic organisms
  - Low or depressed oxygen levels can indicate an excessive demand on oxygen in the system
- ▶ Dioxins and PCBs
  - Man-made chemicals
  - “legacy pollutants”, typically bound to sediments

# Point and Nonpoint Source Pollution

- ▶ ALL of Texas' river and coastal basins, estuaries, coastal wetlands, and bays have been impacted by point and/or nonpoint source pollution.
- Nonpoint source pollution is the primary cause of water quality problems in Texas



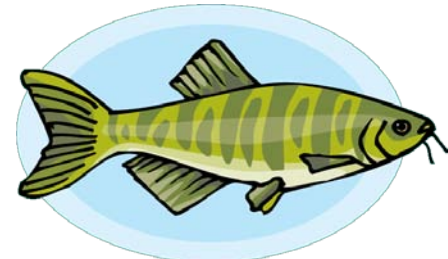
# Characterization project

- ▶ August 2009 – October 2011
  - ▶ Funded through GBEP and TCEQ (ARRA funding)
  - ▶ Researched baseline data from various agencies and universities
  - ▶ Identified gaps and implemented water quality monitoring
  - ▶ Analyzed water quality data, spatially and temporally
  - ▶ Introduced results and watershed planning to key stakeholders in the watershed
- 



# Federal Clean Water Act

- ▶ “restore & maintain the chemical, physical & biological integrity of the Nation’s waters”
  - “water quality which provides for the protection of fish, shellfish, & wildlife & provides for recreation in & on the water”
- ▶ Also, federal Safe Drinking Water Act







# Federal Clean Water Act

- ▶ Requires States to establish Water Quality Standards to achieve objective & goals
- ▶ Requires States to identify waterbodies failing to meet water quality standards & not supporting their designated uses
  - this list of impaired waterbodies is known as the *Texas 303(d) List*
  - must be submitted to USEPA for review & approval every two years

# Water Quality in Texas



▶ Texas State Soil and Water Conservation Board (TSSWCB)

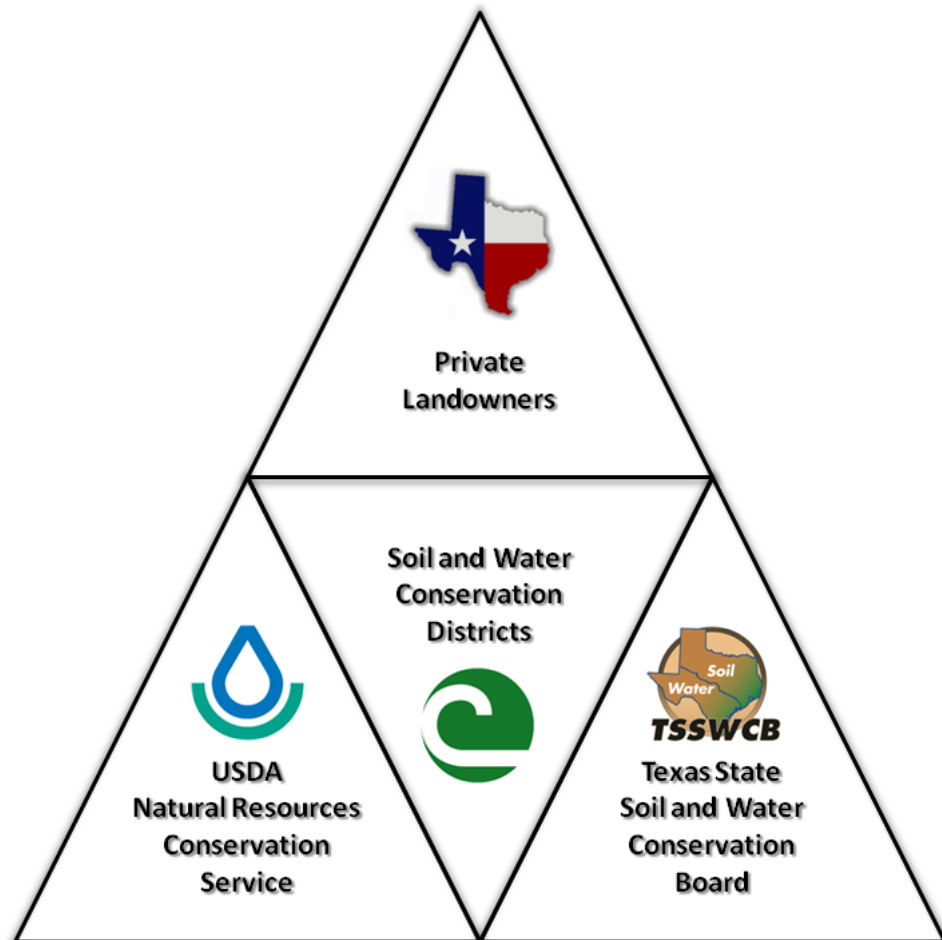
- Agricultural and Silvicultural Nonpoint Source



▶ Texas Commission on Environmental Quality (TCEQ)

- Establish water quality standards
  - Including: Integrated Report, 303(d) List
- Point Source Permitting
- Wastewater Treatment Facilities (WWTF)
- Concentrated Animal Feeding Operations (CAFO)
  - Municipal Separate Storm Sewer System (MS4)
- All other forms of Nonpoint Source

# Texas Conservation Partnership



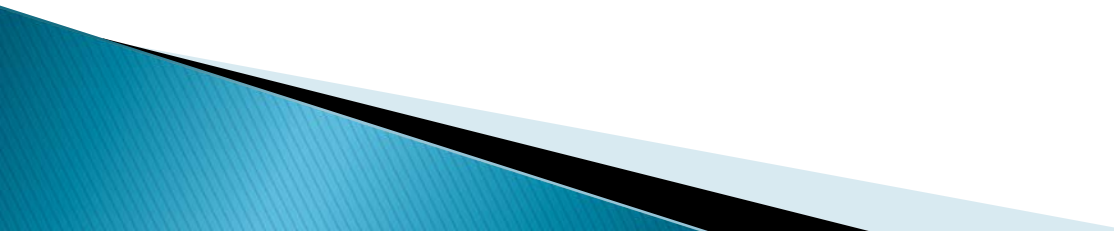
Providing  
Conservation Assistance  
to Private Landowners  
for 70+ Years

LOCAL = 216 SWCDs

STATE = TSSWCB

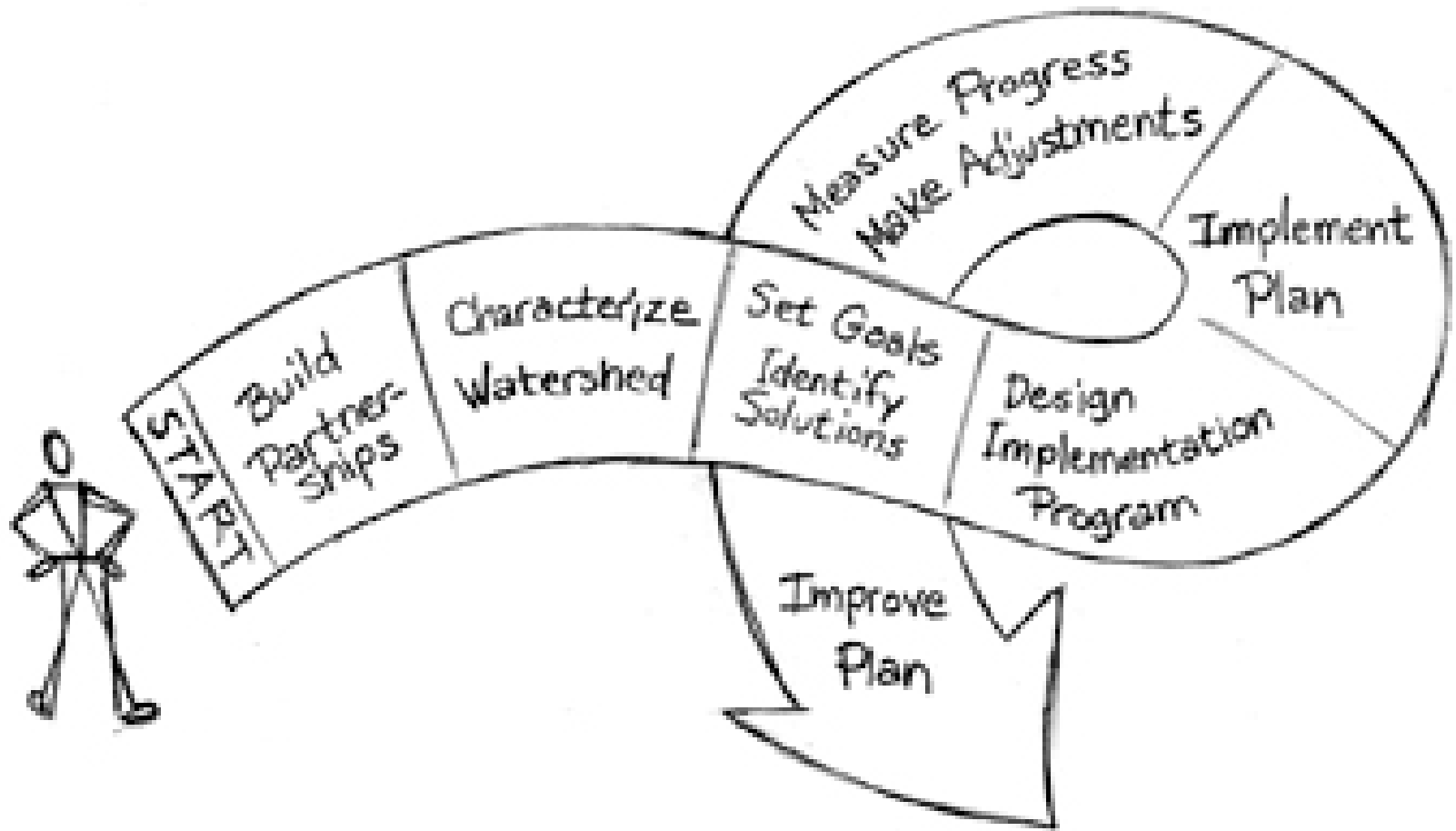
FEDERAL = USDA-NRCS

# Watershed Approach

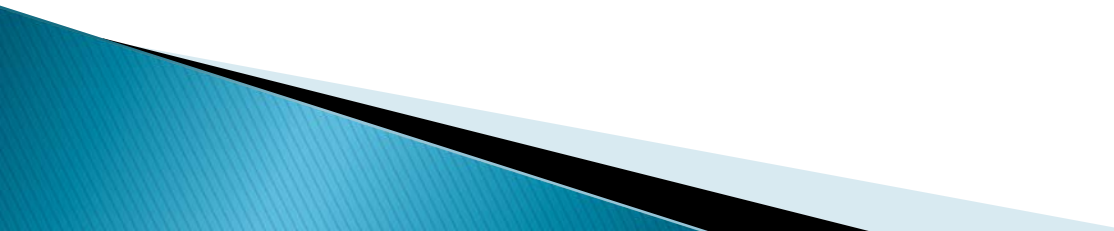
- ▶ Geographic focus based on hydrology rather than political boundaries
  - ▶ Water quality objectives based on scientific data
  - ▶ Coordinated priorities and integrated solutions
  - ▶ Diverse, well-integrated partnerships
- 



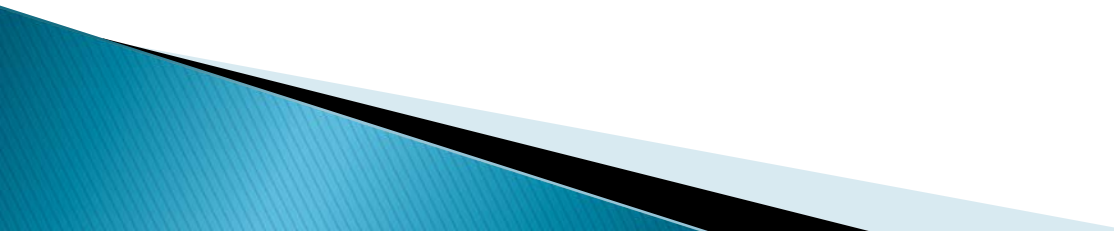
# 6 Steps of Watershed Planning



# What is a WPP?

- ▶ Watershed Protection Plan
  - ▶ WPPs are mechanisms for voluntarily addressing complex water quality problems that cross multiple jurisdictions
  - ▶ WPPs holistically address all of the sources and causes of impairments and threats to both surface and ground water resources within a watershed
  - ▶ WPPs are coordinated frameworks for implementing prioritized and integrated protection and restoration strategies driven by environmental objectives
- 

# What is a WPP?

- ▶ WPPs are tools to better leverage the resources of individual landowners and citizens, local governments, state and federal agencies, and non-governmental organizations
  - ▶ WPPs are developed and implemented through diverse, well integrated partnerships with decision-making founded at the local level
  - ▶ WPPs use adaptive management to modify the plan based on an ongoing science-based process involving monitoring and evaluating strategies and incorporating new knowledge into decision-making
- 

# Role of the Texas State Soil and Water Conservation Board

- ▶ My role as Project Manager
  - Project Oversight
  - Management of all project activities
  - Ensure coordination of activities between project partners
  - Provide funding to conduct project
  - Serve as a technical resource through the development and implementation of the watershed protection plan
- ▶ Headquartered in Temple, TX



# Project Impetus

- ▶ Waterway impaired and on 303(d) List
- ▶ Affects on local health, economy, and the Galveston Bay system
- ▶ Voluntary vs. mandatory approach



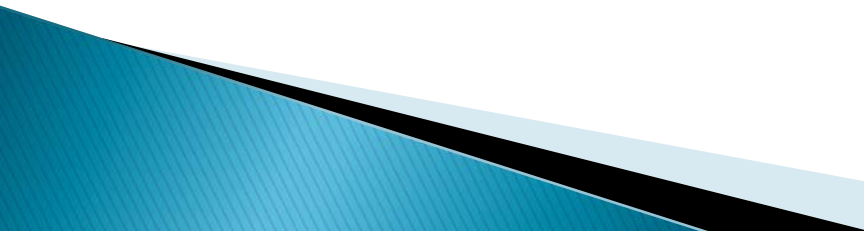
# Double Bayou WPP Project

- ▶ GTRI/HARC submitted a proposal to TSSWCB for a Clean Water Act §319(h) grant from the U.S. Environmental Protection Agency to develop a Watershed Protection Plan for Double Bayou
- ▶ Funding– \$1,157,876 total
  - \$1,023,614 in federal funds
  - \$388,149 local match

# Project Goal(s)

- ▶ To develop a nine element Watershed Protection Plan by:
  - establishing and providing direction for a stakeholder group that will serve as a decision-making body,
  - conducting targeted water quality sampling and analysis,
  - identifying and analyzing spatial and temporal patterns in watershed data; and
  - increasing education among targeted audience.

# Take Home Message

- ▶ Federal Clean Water Act requires us to take action to restore water quality in the Double Bayou watershed
  - ▶ WPP is the preferred, voluntary, holistic path to accomplish this
  - ▶ Watershed planning is driven by stakeholder decision-making, facilitated by a watershed coordinator, and based on scientific analysis
- 

# Questions?

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Board

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