TEXAS
FOREST SERVICE

The Texas A&M University System

BMP Program

Shane Harrington
BMP Forester

Texas Forest Service BMP Program

- BMP Development

- BMP Implementation

- BMP Monitoring

    Implementation

    Effectiveness

BMP Development

- Established in 1989
- Cooperative effort (TFS, TFA, TLC, TSSWCB, TNRCC, EPA, NRCS, TAEX, Industry, etc.)
- Revised in 1992 to include SMZs on Intermittent Streams
- Revised in 1995 to include Wetland BMPs
- Revised in 2004 for clarification

BMP Handbook

Old Manual
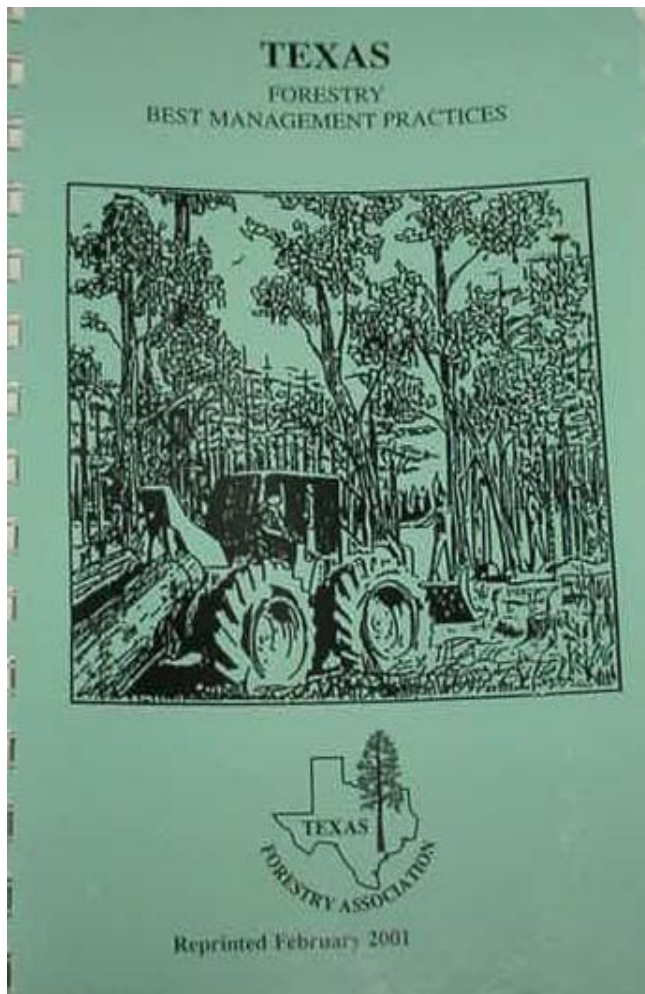
New Manual
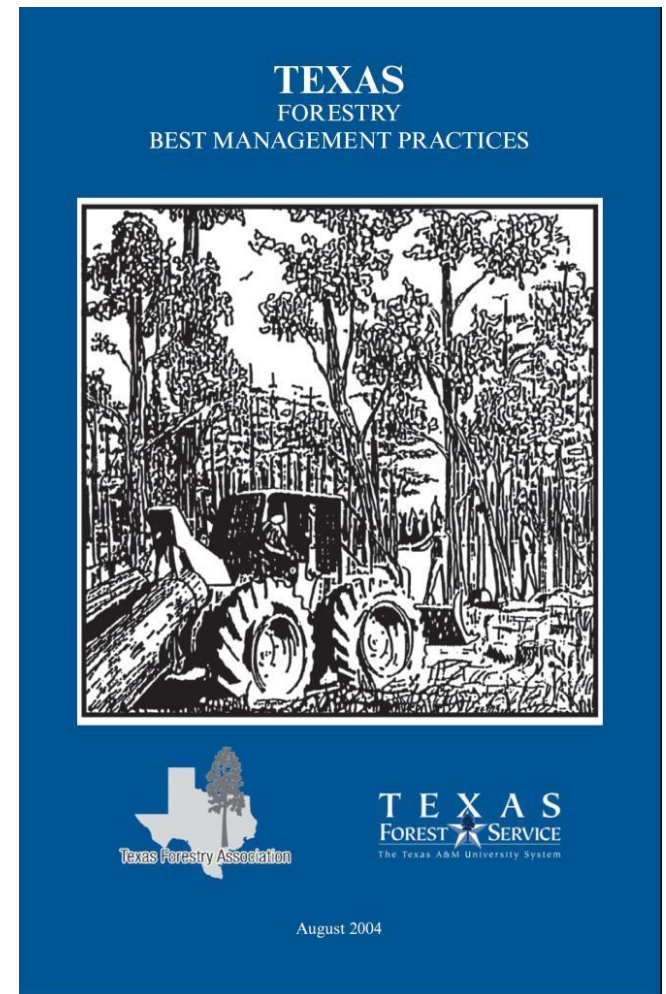
Texas BMPs Include:

- Planning
- Harvesting
- Prescribed Fire
- Silvicultural Chemicals
- Site Preparation and Planting
- Streamside Management Zones
- Road Construction/Maintenance
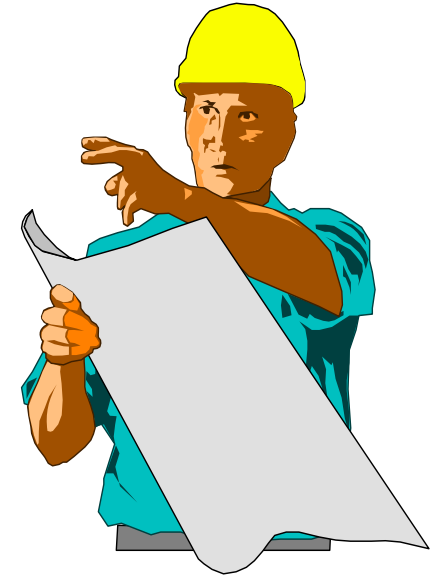
Wetland / BMP
Coordinating Committee

TFS	Forest Industry
TSSWCB	USACE
TCEQ	NRCS
USFWS	TFA
TPWD	USFS
SFASU	EPA
Forestry Consultants	TLC

BMP Implementation

Training

    - Logger, Landowner, Forester, TFS Personnel
BMP Training

Education

    - CLOA workshops, presentations, newsletters,
media, display, surveys

Demonstration

    - State Forests

Education

SFI - CLOA Workshops and Tours

- Conduct seminars for landowners to learn about sustainable forestry and BMPs
- Held 40 workshops to date, reaching over 3000 people
- Establish new, recharge, or revive struggling CLOAs

Forest Landowner Seminars

Mt. Pleasant

New Boston

Dallas

Atlanta

Marshall

Overton

Carthage

Henderson

Alto

Lufkin

Crockett

Newton

Colmesneil

Austin

Kountze

Bastrop

Livingston

Trinity

Huntsville

Media

Well Managed Forests

Providing Texans with Clean Water Now and in the Future

Use Forestry Best Management Practices
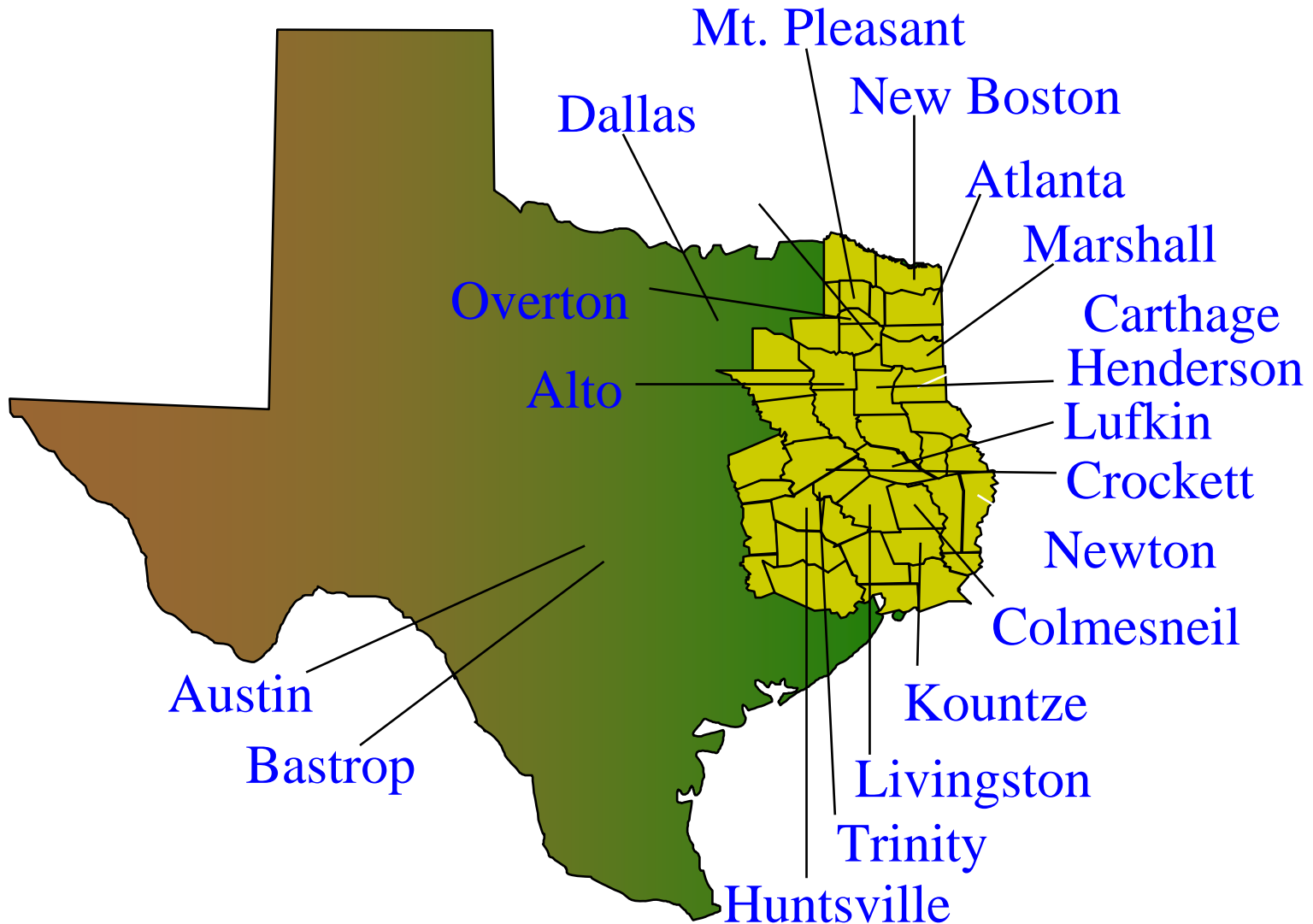
Leave Trees Along Streams

1-866-TX-TREES

TEXAS FOREST SERVICE
The Texas A&M University System

This Site is Being Managed Using Best Management Practices:

Protecting Our Environment

Providing Forest Products Today and Tomorrow

Partial assistance provided by Wal-Mart's Clean Air/Clean Water Program in association with Keep Nacogdoches Beautiful and Texas Forest Service

Owners: Kathleen Jackson, Paul Jackson and W.E. Langford

Consulting Foresters: CJT & Associates, Mt. Enterprise, TX

WAL★MART

TEXAS FOREST SERVICE

BMP Display and SMZ Model

Demonstration

🌲 5 state forests totaling 7,314 acres

Kirby, Jones, Fairchild, Alford, Masterson

🌲 Public education, research, and forest management demonstrations (BMPs)

🌲 Virtual forest tours are on the Internet

🌲 Installed new demonstrations on the Jones in 2005

Stream Crossing

Highway Entrance

Stabilized Road

BMP Monitoring

Implementation

Are BMPs Installed?

Effectiveness

Do BMPs Work?

BMP Implementation Monitoring

- Began in 1990
- Field evaluations of at least 150 logging operations
- Sites are randomly selected
- Number of sites selected is dependent upon the annual timber harvest in each county
- All ownerships - Public, Private, and Industry
- Timber harvests (total & partial harvests) and/or site preparation

Best Management Practices

2003-2005 Implementation Results
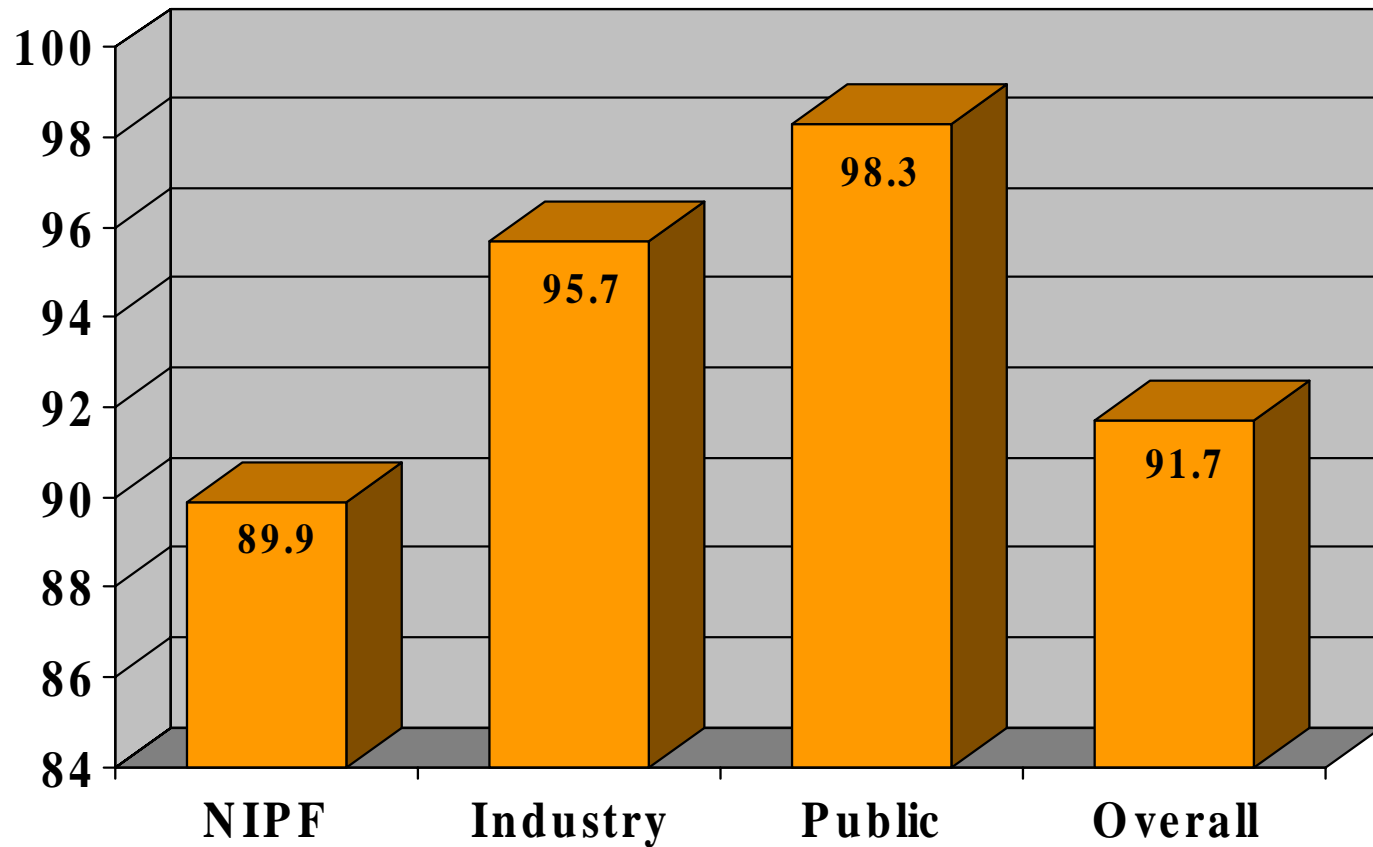
Best Management Practices

Implementation Results 1992-2005
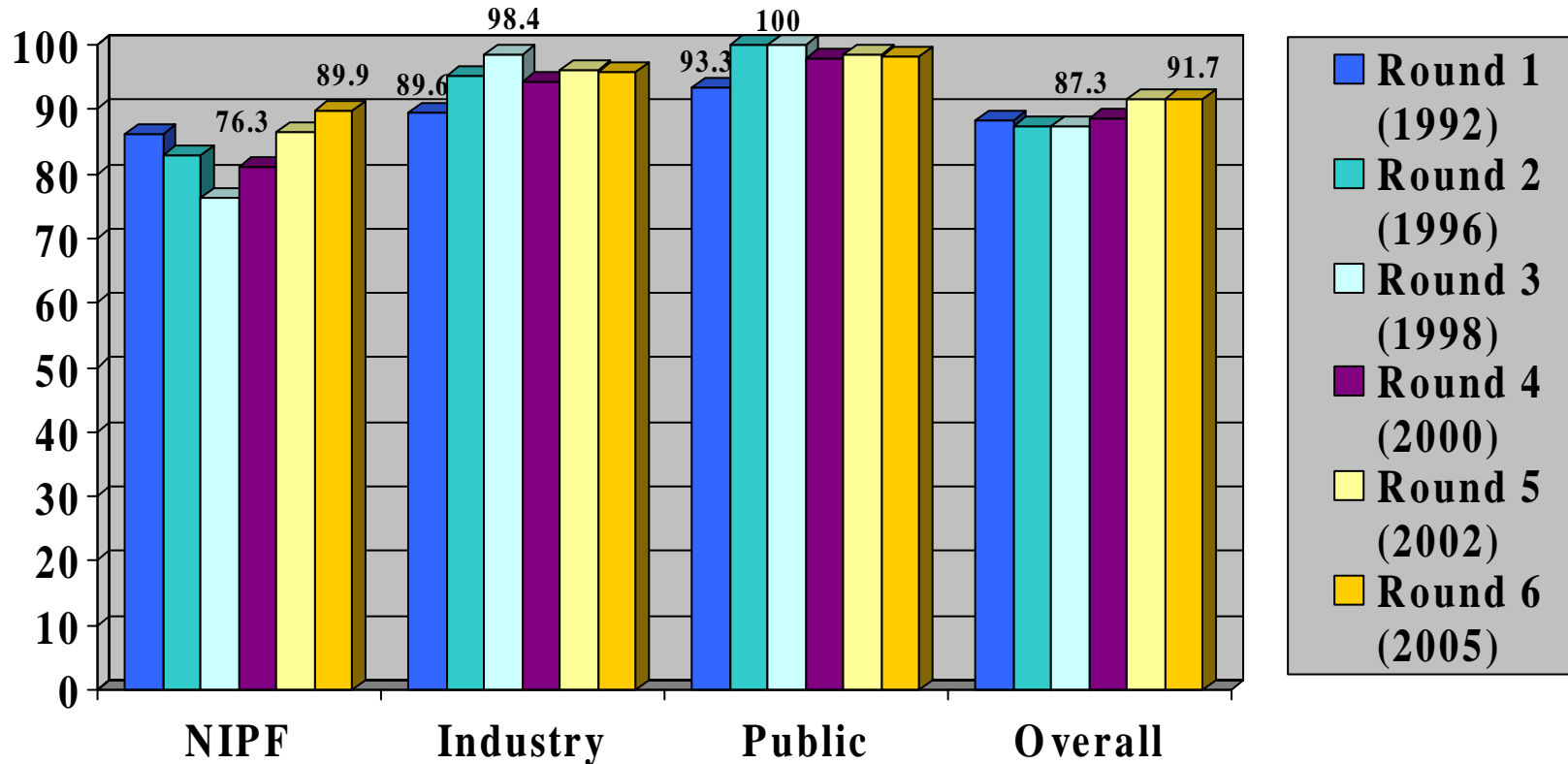
Statistical Significance

BMP Implementation was Statistically Significantly Higher When:

- The logger had attended formal BMP training
- BMPs were included in the timber sale contract
- The wood was delivered to a major SFI^{SM} mill
- A forester was involved in the sale or activity
- The landowner was familiar with BMPs
- The landowner was a member of a forestry organization
- The landowner does not live in a metropolitan area
- The landowner was not absentee

Improvements & Deficiencies

2003-2005 Implementation Results

Improvements

- Decrease in number of significant risks to water quality

- Higher overall BMP implementation on permanent and temporary roads

- Increase in BMP implementation on NIPF lands

Deficiencies

- Failure to restore and stabilize stream crossings on temporary roads

- Failure to remove logging debris from streams

BMP Effectiveness Study

- BACI design (before - after / control - impact)

- 4 project sites located throughout East Texas

- Biological, grab, and stormwater monitoring

- Each site will have an above and below location

- Results from above and below locations will be compared before and after treatment, respectively to determine BMP effectiveness

- Results from above and below will be compared to account for natural variability

Project Timeline

<u>Key Dates</u>

July 2003 – Project Begins

November '04 – March '05 – Treatment (Harvest)

September – October 2005 – Treatment (Site Prep)

January 2006 – Treatment (Reforestation)

August 2007 – End Data Collection

Spring 2008 – Publish Results

Typical Study Site
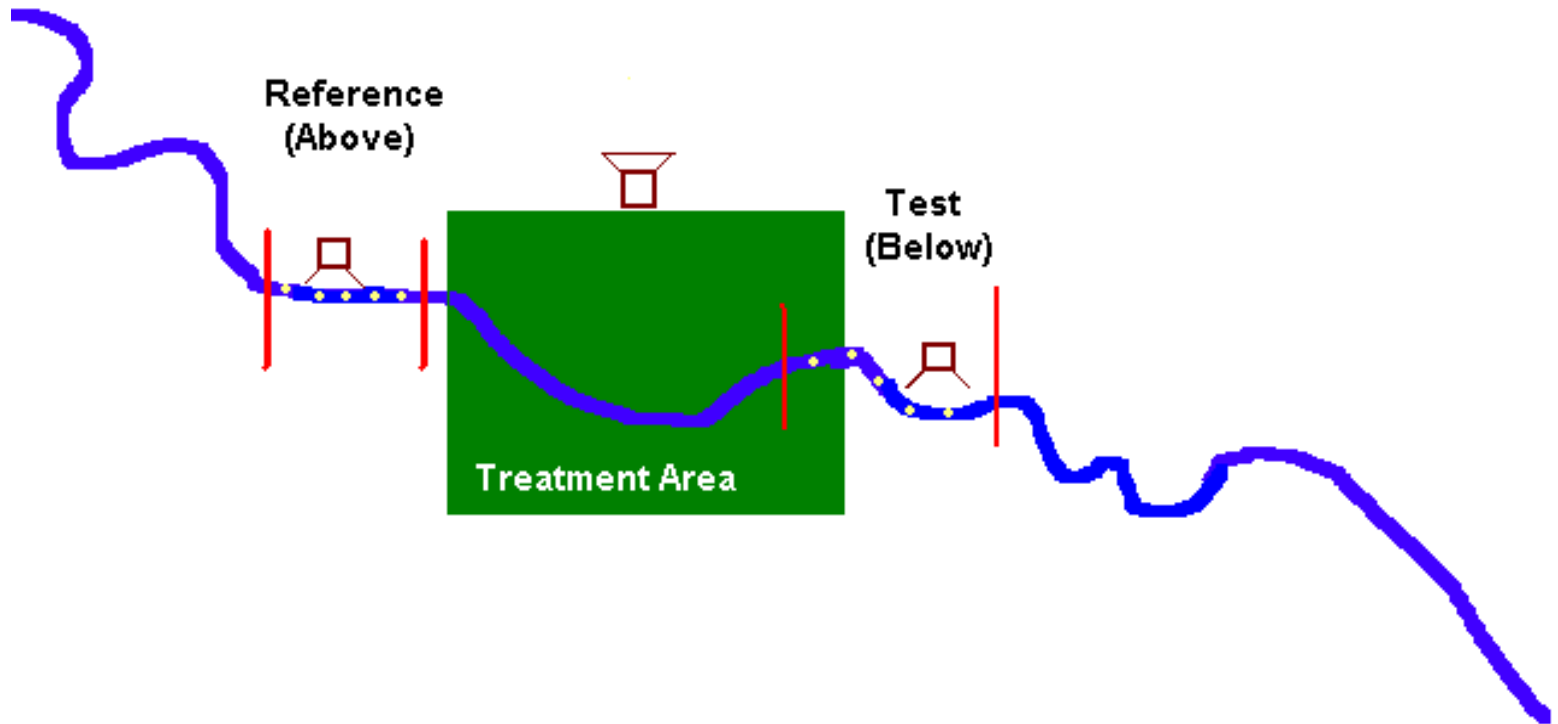
Houston County Site

Houston County Stream

Sampling Parameters

Physiochemical

- pH
- DO
- Conductivity
- Temperature
- Turbidity
- TSS
- Phosph / Nitrogen

Biological

- Habitat assessment

    - Physical Characteristics

- Bioassessment

    - Benthics

    - Fish

Habitat Assessment

Biological Sampling - Fish

Biological Sampling - Fish

Spotted Sunfish

Yellow Bullhead

Spotted Bass

Biological Sampling - Benthics

Biological Sampling - Benthics

Dragonfly

Stonefly

Mayfly

Midgefly

Caddisfly

Water Sampling - Grab

Water Sampling - Storm Events

Rainfall Totals by Site

Project Site	2004 (Rain Gauge)	2005 (Rain Gauge)	2006 (Rain Gauge)	2007 (YTD Rain Gauge)	Historical (NOAA)
Cherokee	70.5	32.22	49.94	31.41	44.47
Houston	62.26	30.9	56.78	29.90	44.49
Newton	76.41	47.06	70.72	23.79	54.58
San Augustine	80.17	40.08	53.88	32.72	53.75

Preliminary Results

- Since 2003 a total of 32 habitat assessments and biological samples have been conducted

- A total of 87 different benthic species have been collected from all four sites

- A total of 39 different fish species have been collected from all four sites

- Post treatment sampling has shown an increase in fish diversity in the test section at each site vs. pre-treatment

- A total of 222 storm samples have been pulled and analyzed as well as 180 grab samples

- No significant changes in water chemistry post treatment vs. pre-treatment and control vs. test area

More Information

Texas Forest Service

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