

# Tres Palacios Creek Watershed July 30<sup>th</sup> Meeting Recap

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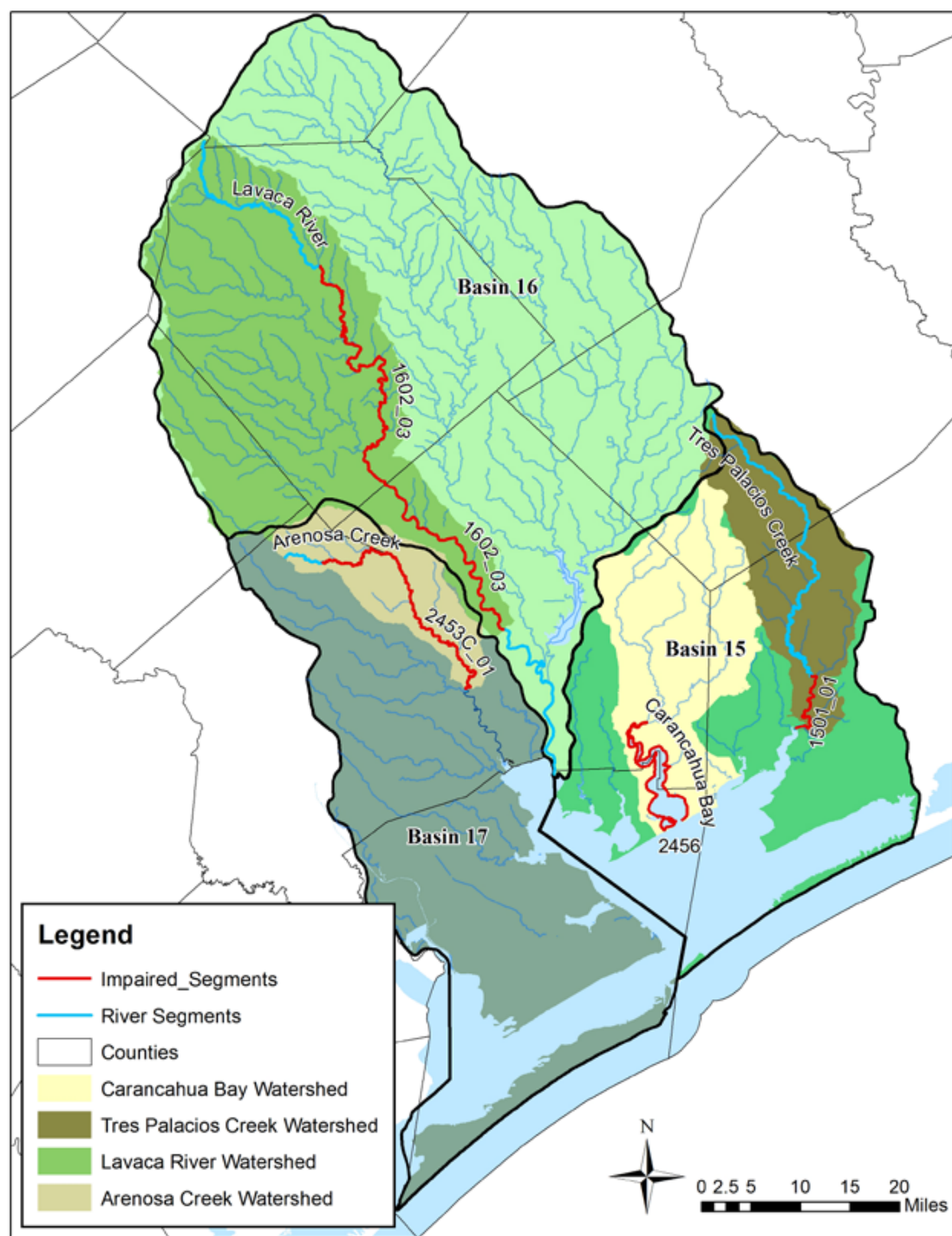
*August 27, 2015*



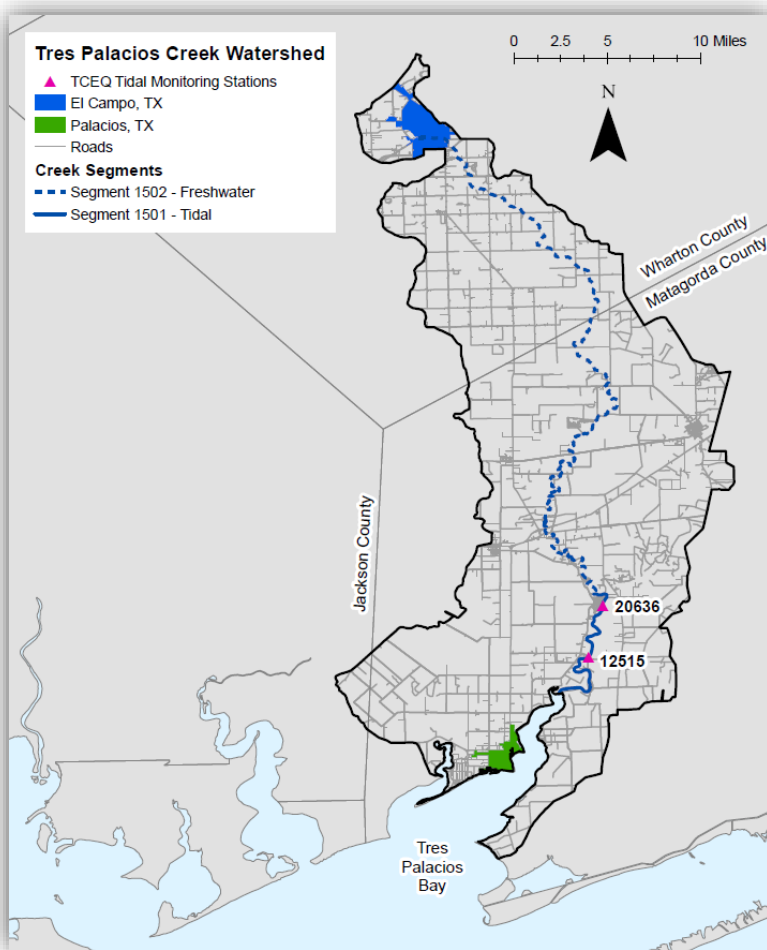
# Texas Water Resources Institute

- ⦿ Operating unit of:
  - ⦿ Texas A&M AgriLife Research
  - ⦿ Texas A&M AgriLife Extension Service
  - ⦿ Texas A&M University College of Agriculture and Life Sciences
- ⦿ Est. by TX Legislature & Governor in 1964
  - ⦿ To aid in the resolution of State and regional water resource issues

State requested TWRI to assist in addressing bacteria impaired waters in the Matagorda Bay basin



# Tres Palacios Watershed Description



- 235,056 acres (367 square miles)
- Creek begins near El Campo in Wharton County
- Tidal segment begins ~0.5 miles upstream of confluence with Wilson Creek and flows ~9 miles into Tres Palacios Bay
- Meets Tres Palacios Bay near Palacios in Matagorda County
- 2 Monitoring Sites in Tidal Section
  - ▲ **20636** – downstream of confluence with Wilson Creek
  - ▲ **12515** – at FM 521

# Tres Palacios Creek: At FM 521

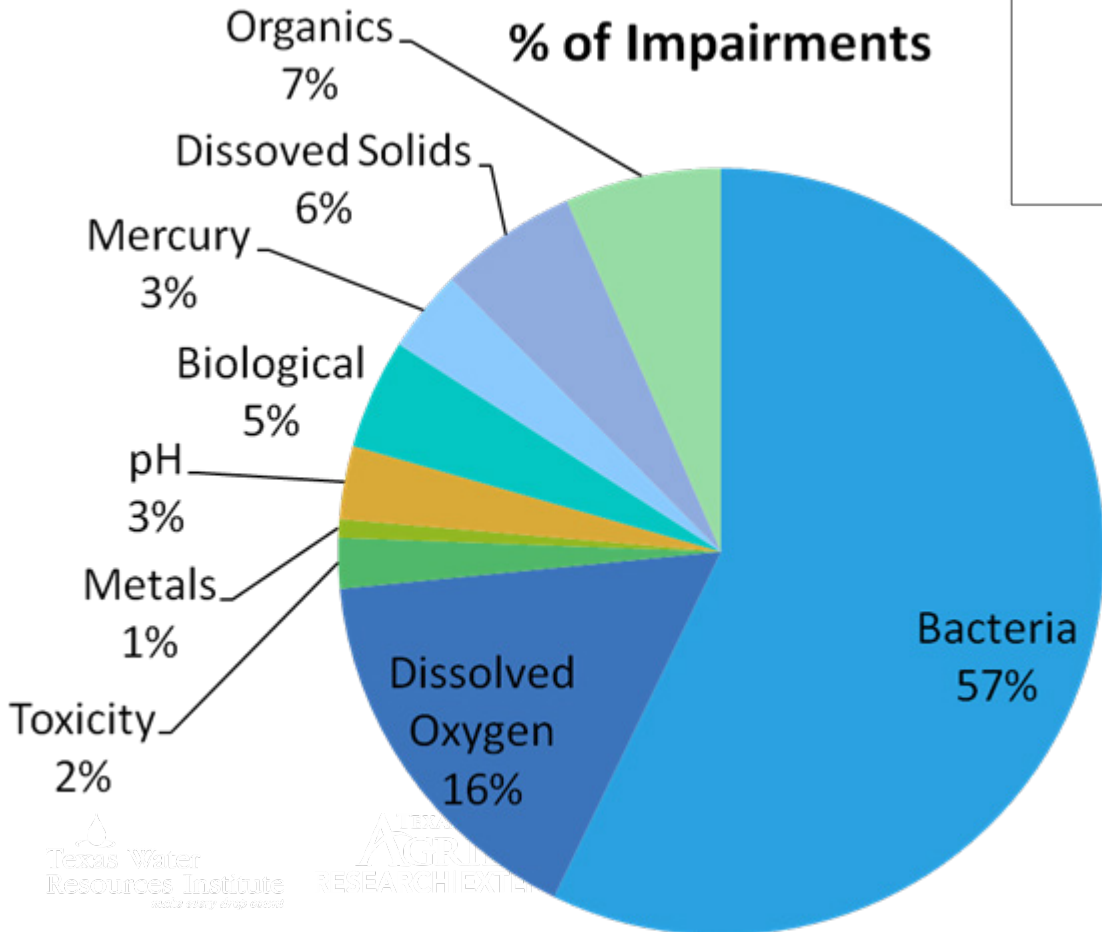
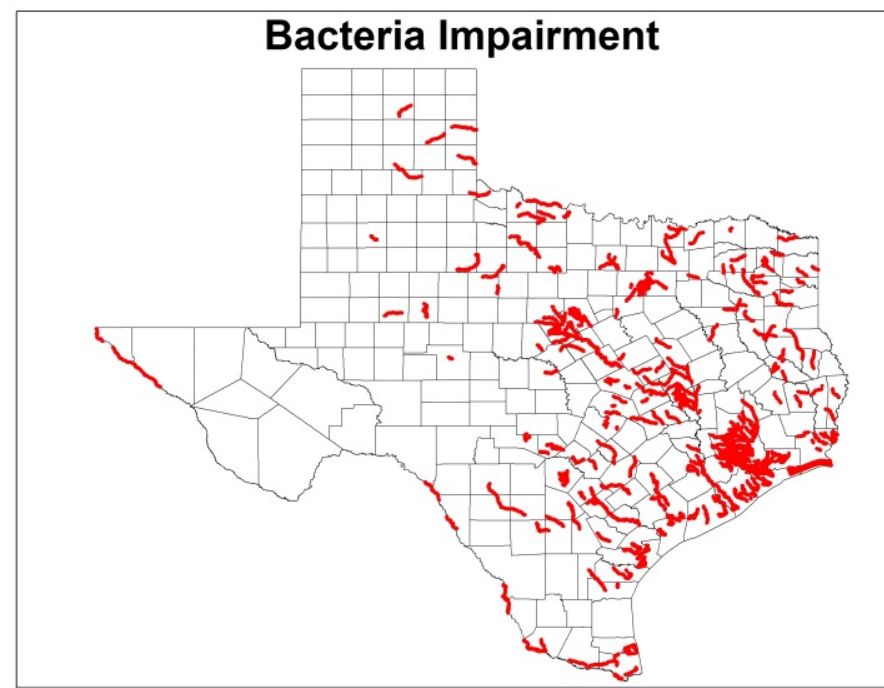
Parameter	# of Samples	Min	Max	Avg	Geometric Mean	TCEQ Standard (Screening Criteria)
Water Temp (°C)	411	7.34	33.2	23.71		35.00 maximum
Dissolved Oxygen (mg/L)	372	0.56	16.3	6.89		5.0/4.0 (grab avg/min) <sup>x</sup>
pH (standard units)	373	6.5	9.9	7.82		6.5 - 9.0 range
Ammonia Nitrogen (mg/L)	250	0.01	2	0.12		0.46 (>20% exceedance) <sup>y</sup>
Nitrate Nitrogen (mg/L)	184	0.5	100	15.57		1.10 (>20% exceedance) <sup>y</sup>
Total Phosphorus (mg/L)	51	0	3.4	0.68		0.66 (>20% exceedance) <sup>y</sup>
Orthophosphorus (mg/L)	48	0.03	1.13	0.35		0.46 (>20% exceedance) <sup>y</sup>
Enterococci (cfu/100mL)	160	1	24,000		105.68	35.00 geometric mean
Chlorophyll-a (µg/L)	184	0.5	100	15.57		21.00 (>20% exceedance) <sup>y</sup>

# Tres Palacios Creek:

## Downstream of confluence with Wilson Creek

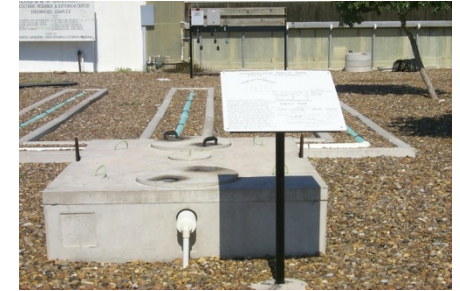
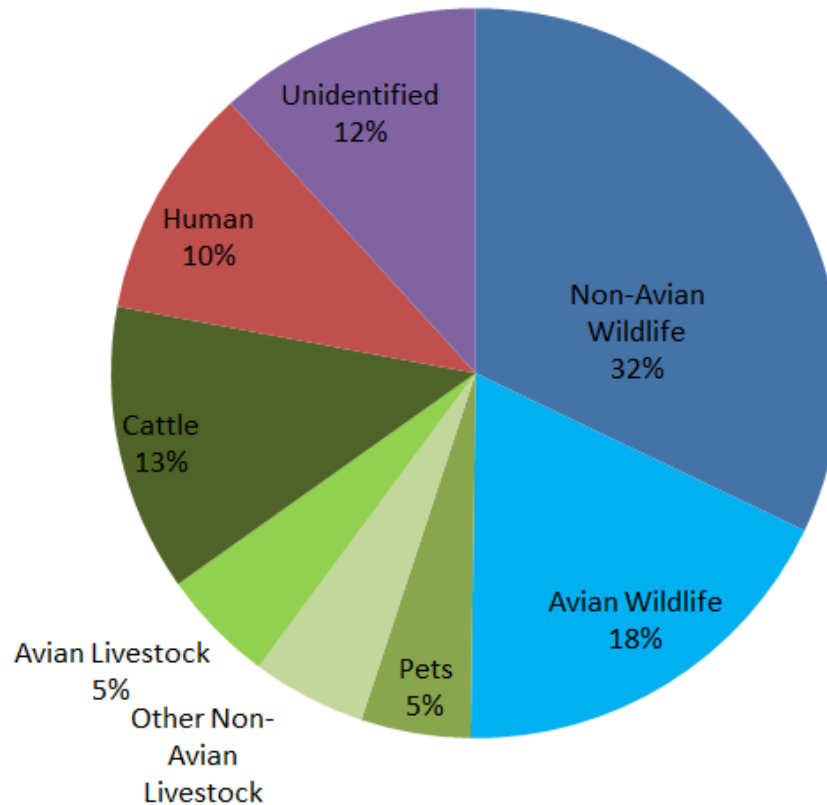
Parameter	# of Samples	Min	Max	Avg	Geometric Mean	TCEQ Standard (Screening Criteria)
Water Temp (°C)	18	9.70	31.40	22.70		35.00 maximum
Dissolved Oxygen (mg/L)	18	3.00	10.90	6.18		5.0/4.0 (grab avg/min) <sup>x</sup>
pH (standard units)	18	6.60	8.40	7.76		6.5 - 9.0 range
Ammonia Nitrogen (mg/L)	18	0.02	0.90	0.15		0.46 (>20% exceedance) <sup>y</sup>
Nitrate Nitrogen (mg/L)	18	0.02	2.33	0.73		1.10 (>20% exceedance) <sup>y</sup>
Total Phosphorus (mg/L)	17	0.08	0.59	0.30		0.66 (>20% exceedance) <sup>y</sup>
Orthophosphorus (mg/L)	9	0.04	0.43	0.19		0.46 (>20% exceedance) <sup>y</sup>
Enterococci (cfu/100mL)	18.00	10	1.3x10 <sup>6</sup>		148.92	35.00 geometric mean
Chlorophyll-a (µg/L)	18	1.00	38.00	10.67		21.00 (>20% exceedance) <sup>y</sup>

# #1 Water Quality Issue in Texas is addressing Bacteria Impairments





# What are the sources of bacteria?





# How does Bacteria get into Creeks?

## ⦿ Non-Point Sources

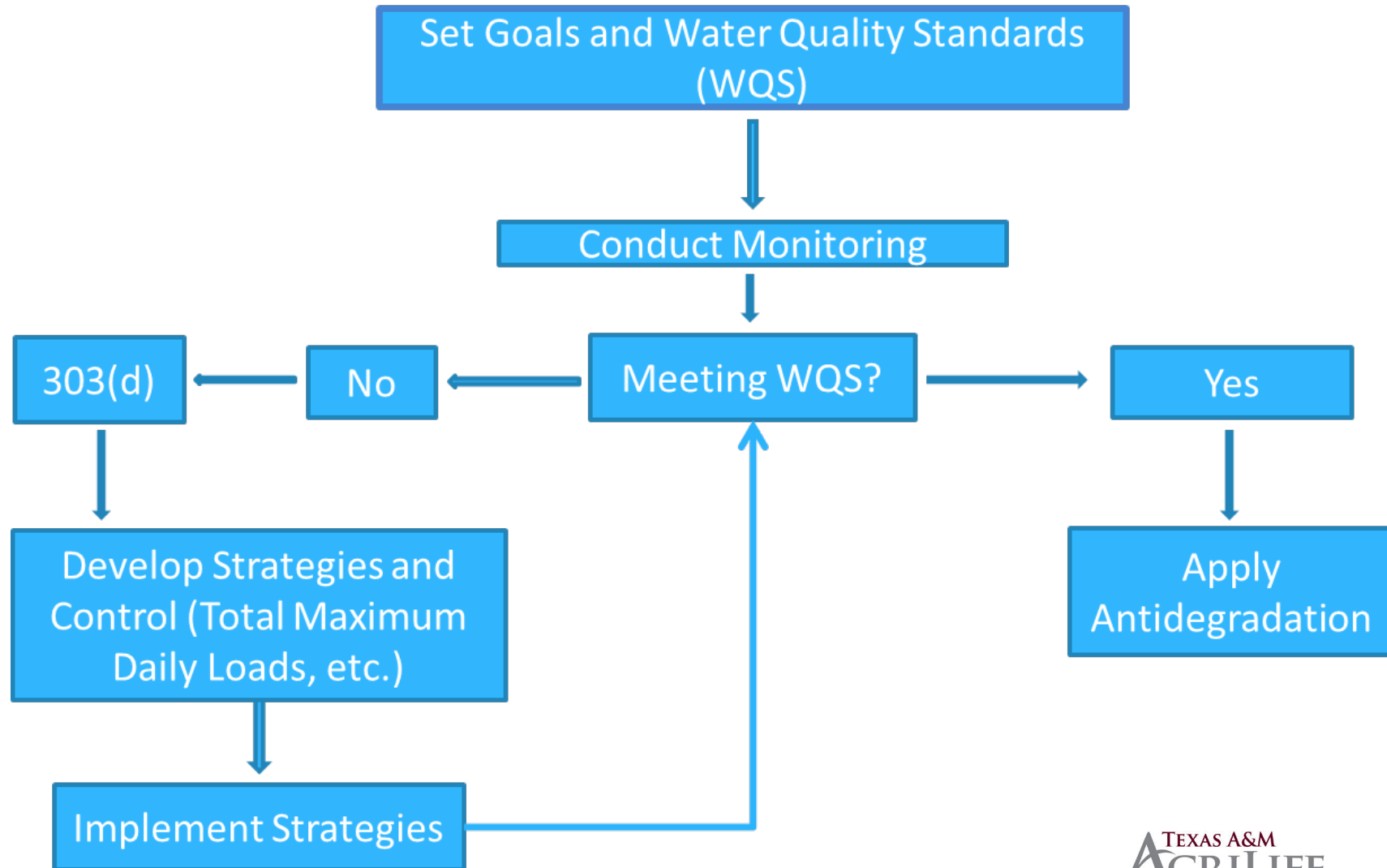
- ⦿ Animals directly deposit fecal material into water
- ⦿ Fecal material runoff from landscape
  - ⦿ Pet waste, livestock manure, wildlife scat
- ⦿ Illegal dumping
- ⦿ Failing septic systems

## ⦿ Point Sources

- ⦿ Improperly treated wastewater discharge
- ⦿ Stormwater from cities



# Water Quality Management Overview



# What does a watershed plan consist of?

- ⊙ Identification of Sources of Bacteria
- ⊙ Estimated Loading Reductions Needed
- ⊙ Description of Management Measures
- ⊙ Education and Outreach Needed
- ⊙ Schedule for Implementation
- ⊙ Implementation Milestones
- ⊙ Possible Sources of Financial Assistance and Estimated Costs
- ⊙ Measures of Success (i.e. indicators to measure reductions)
- ⊙ Monitoring plan to evaluate effectiveness

# Keys to developing successful strategies

## Local stakeholder involvement essential

- ⦿ Involvement of a diversity of interests
- ⦿ Collaborative decision-making
  - ⦿ Joint goals and priorities for partnership initiatives
- ⦿ Decision-making based on sound science & accurate info
- ⦿ Strong communication and outreach

# Major Tasks for Committee & Stakeholders

- ⦿ Provide guidance and input on potential sources of bacteria and estimated pollutant loads
- ⦿ Set goals and objectives
- ⦿ Guide identification of measures that could be implemented to address bacteria
- ⦿ Identify level of implementation that's reasonable
- ⦿ Identify outreach and education that is needed
- ⦿ Oversee development of an implementation plan & schedule

# Possible Frameworks for Organizing Stakeholders

## Option 1

Coordination Committee ← Stakeholder comments

## Option 3

No formal framework

## Option 2

Coordination Committee ← Stakeholder comments

↑  
Workgroups

## Option 4

Other recommendations



# Possible Work Groups

## Work Groups Used in Other Watersheds:

- Agricultural Issues
- Coordination and Policy
- Education and Outreach
- Habitat
- On-Site Sewage
- Ordinance and Planning
- Natural Resource Management
- Science and Monitoring
- Urban Storm Water
- Waste Water Infrastructure
- Wildlife

## Work Groups tentatively recommended for Tres Palacios:

- Ag / Wildlife Work Group
- Waste Water Work Group
- Education & Outreach Work Group

# Possible Committee Members (18)

- ⊙ Citizen
- ⊙ City of El Campo (WWTP)
- ⊙ City of Palacios
- ⊙ Landowners
- ⊙ Matagorda County Extension Agent
- ⊙ Matagorda County Health Inspector
- ⊙ Matagorda County Judge or Commissioner
- ⊙ Matagorda County Soil and Water Conservation District
- ⊙ Palacios Chamber of Commerce
- ⊙ Subdivision or homeowner's association
- ⊙ Texas Parks & Wildlife Department
- ⊙ Texas Sea Grant
- ⊙ Texas State Soil & Water Conservation Board
- ⊙ USDA-Natural Resources Conservation Service
- ⊙ Wharton County Extension Agent
- ⊙ Wharton County Health Inspector
- ⊙ Wharton County Judge or Commissioner
- ⊙ Wharton County Soil and Water Conservation District
- ⊙ Others

# Possible Decision Making Processes

## ⦿ Formal

- ⦿ Established bylaws that govern the actions of the committee
- ⦿ Adhere to Open Meeting Act Requirements

## ⦿ Informal

- ⦿ Develop a set of ground rules that will be used to govern the committee
- ⦿ Committee members approve ground rules and their use

# 4 requests from July 30<sup>th</sup> meeting

- ⦿ Stakeholders asked that the 1,300,000 cfu/100 ml be looked at.
  - ⦿ TWRI confirmed with TCEQ that this was a legitimate measurement
- ⦿ Set up website for getting comments
  - ⦿ <http://matagordabasin.tamu.edu/>
- ⦿ Send out example/draft ground rules
  - ⦿ Sent out via email on August 7<sup>th</sup>
- ⦿ Need to sample more extensively in impaired segment
  - ⦿ TWRI working to utilize volunteer monitors to increase sampling

# Action Items for Tonight's Meeting

- ⦿ Finalize Ground Rules
- ⦿ Seek volunteers & recommendations for:
  - ⦿ Initial stakeholder group membership
  - ⦿ Initial work group membership
- ⦿ Review typical content of watershed plans
- ⦿ Discuss next steps