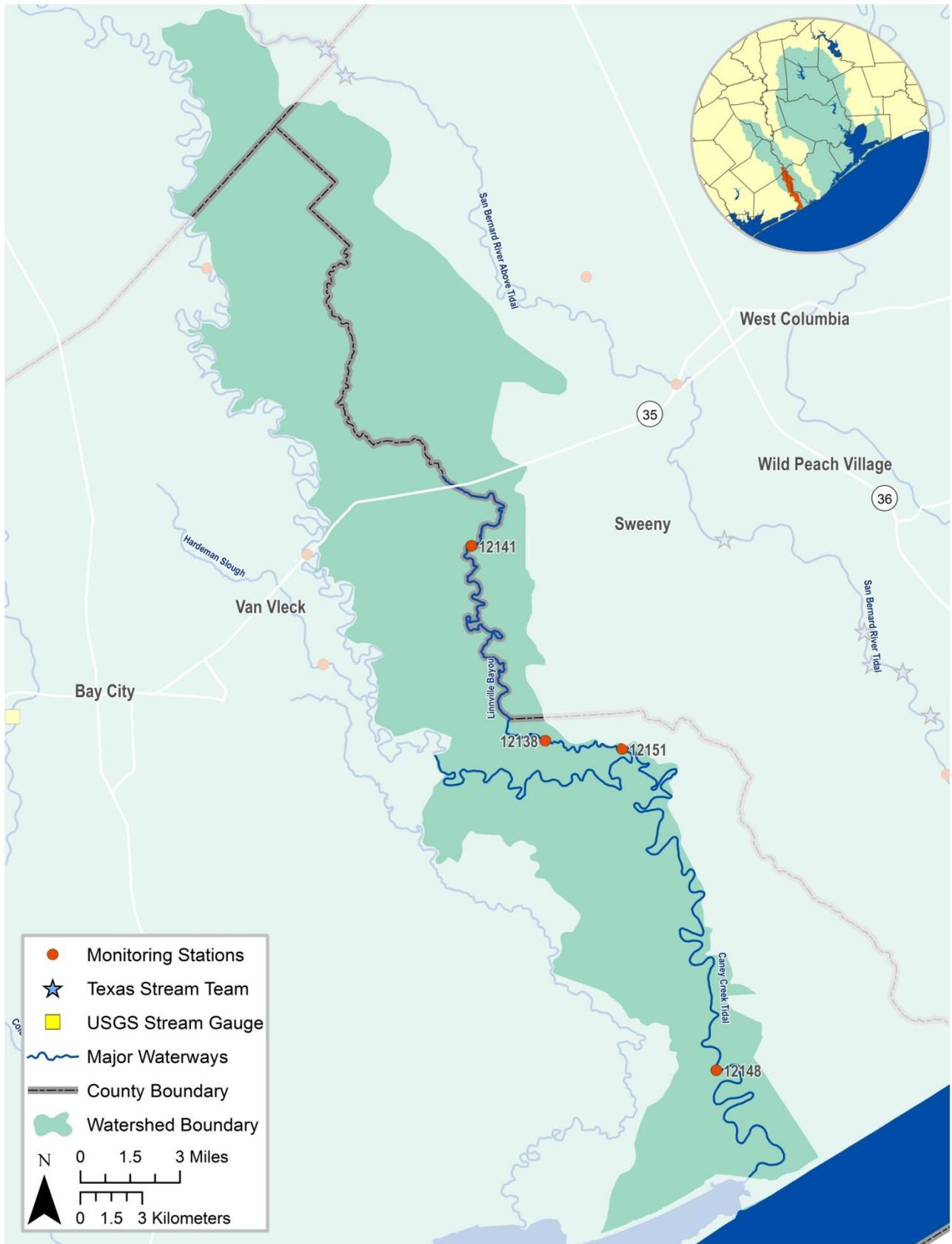
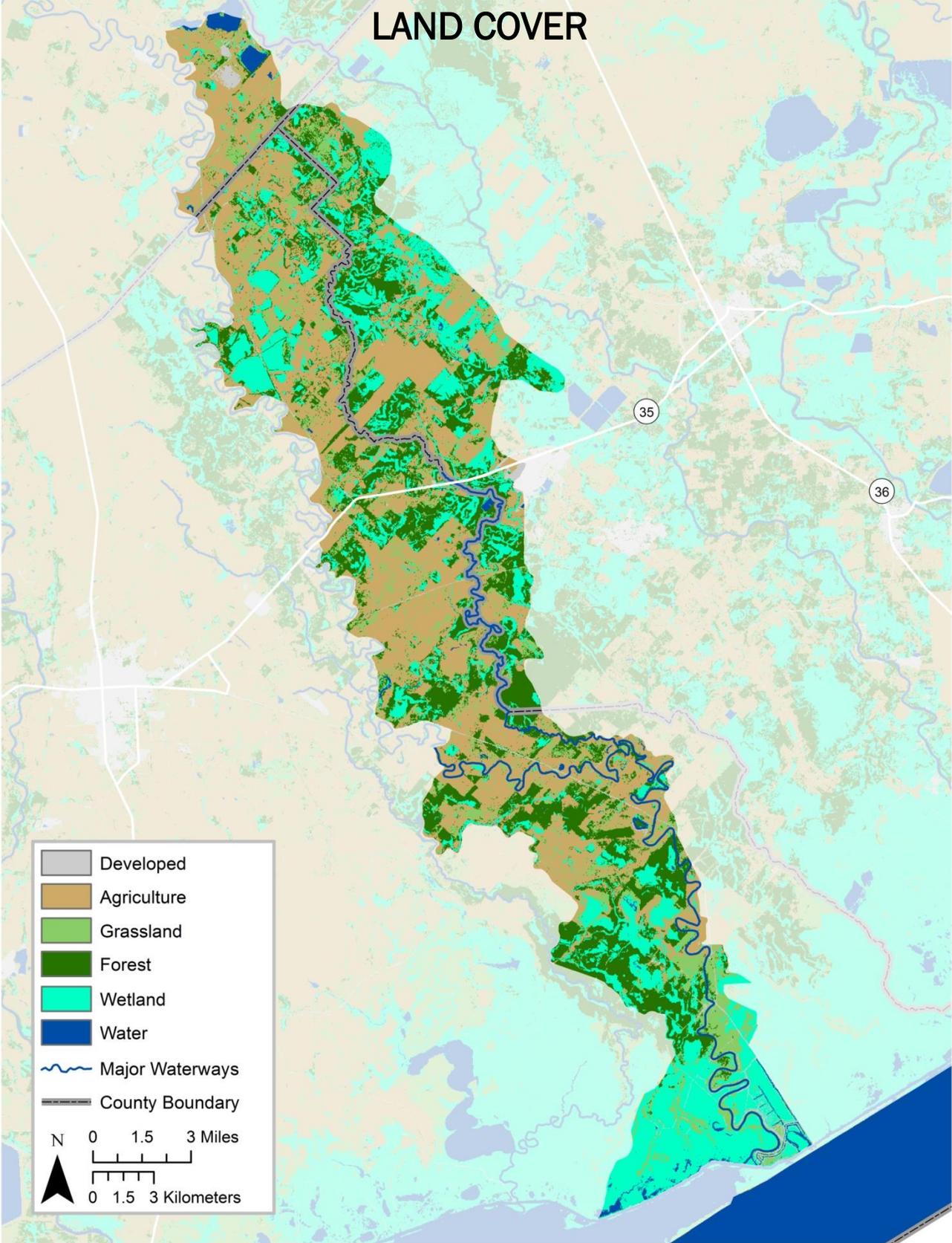


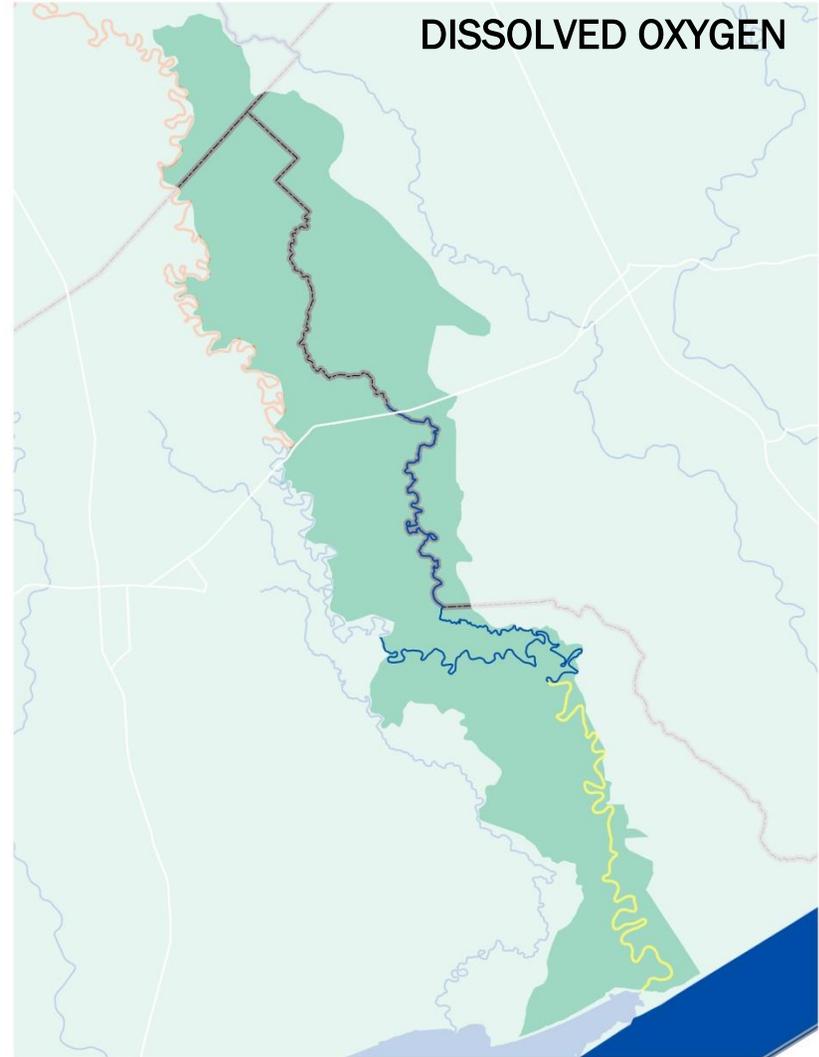
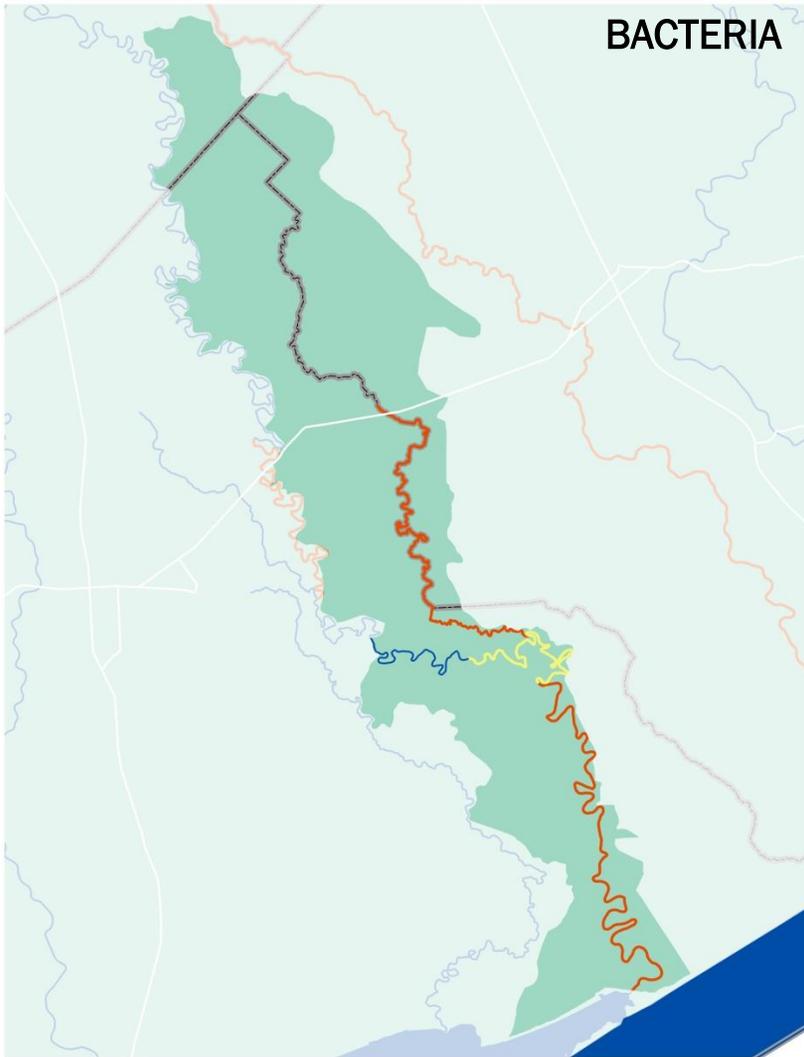
CANEY CREEK TIDAL - SEGMENT 1304



CANEY CREEK TIDAL - SEGMENT 1304

LAND COVER





 Impairment  Concern  No Impairments or Concerns

Segment Number: 1304		Name: Caney Creek Tidal			
Length: 36 miles	Watershed Area: 142 square miles	Designated Uses: Primary Contact Recreation 1; High Aquatic Life			
Number of Active Monitoring Stations: 4		Texas Stream Team Monitors:		Permitted Outfalls: 6	
Description:	Segment 1304 (Tidal Stream w/ high ALU): From the confluence with the Intracoastal Waterway in Matagorda County to a point 1.9 km (1.2) mi) upstream of the confluence of Linville Bayou in Matagorda County Segment 1304A (Intermittent Stream with Pools w/ limited ALU): Linnville Bayou (unclassified water body) – From the confluence with Caney Creek in Matagorda County upstream to a point 0.7 km above FH 35 in Brazoria/Matagorda Counties				

Percent of Stream Impaired or of Concern						
Segment ID	PCBs/Dioxin	Bacteria	Dissolved Oxygen	Nutrients	Chlorophyll a	Other
1304	-	100	74	-	-	-
1304A	-	100	-	-	-	-

Segment 1304						
Standards	Screening Levels		Screening Levels	Screening Levels		
	Tidal Stream	Perennial Stream		Tidal Stream	Perennial Stream	
Temperature (°C/°F):	35 / 95	35 / 95	Ammonia (mg/L):	0.46	0.33	
Dissolved Oxygen (24-Hr Average) (mg/L):	4.0	3.0	Nitrate-N (mg/L):	1.10	1.95	
Dissolved Oxygen (Absolute Minima) (mg/L):	3.0	2.0	Orthophosphate Phosphorus (mg/L):	0.46	0.37	
pH (standard units):	6.5-9.0	6.5-9.0	Total Phosphorus (mg/L):	0.66	0.69	
Enterococci (MPN/100mL) (grab):	104		Chlorophyll a (µg/L):	21	14.1	
Enterococci (MPN/100mL) (geometric mean):	35					
<i>E. coli</i> (MPN/100 mL) (grab):		399				
<i>E. coli</i> (MPN/100 mL) (geometric mean):		126				

FY 2016 Active Monitoring Stations

Site ID	Site Description	Frequency	Monitoring Entity	Parameter Groups
12138	Linville Bayou at Simms Rd	Quarterly	EIH	Field, Conventional, Bacteria
12141	Linville Bayou at FM 324	Quarterly	TCEQ	Field, Conventional, Bacteria, Chlorophyll a
12148	Caney Creek Tidal at Chambless Rd	Quarterly	TCEQ	Field, Conventional, Bacteria, Chlorophyll a
12151	Caney Creek at concrete bridge and FM 521	Quarterly	EIH	Field, Conventional, Bacteria

Water Quality Issues Summary

Issue	2014 Assessment <i>I - Impaired</i> <i>C - Of Concern</i>	Possible Causes / Influences / Concerns Voiced by Stakeholders	Possible Solutions / Actions To Be Taken
Elevated Levels of Indicator Bacteria	1304 I 1304A I	<ul style="list-style-type: none"> ▪ Animal waste from agricultural production, hobby farms, and riding stables ▪ Constructed stormwater controls failing ▪ Developments with malfunctioning OSSFs ▪ Improper or no pet waste disposal ▪ Direct and dry weather discharges ▪ Waste haulers illegal discharges/improper disposal ▪ Poorly operated or undersized WWTFs ▪ WWTF non-compliance, overflows, and collection system by-passes 	<ul style="list-style-type: none"> ▪ Implement stream fencing or alternative water supplies to keep livestock out of or away from waterways ▪ Create and implement Water Quality Management Plans for individual agricultural properties ▪ Install and/or conserve vegetative buffer areas along all waterways ▪ Improve compliance and enforcement of existing stormwater quality permits ▪ Improve construction oversight to minimize TSS discharges to waterways ▪ Add water quality features to stormwater systems ▪ More public education regarding OSSF operation and maintenance ▪ Ensure proper citing of new or replacement OSSFs ▪ More public education on pet waste disposal ▪ Regionalize chronically non-compliant WWTFs ▪ Increase monitoring requirements for self-reporting ▪ Require all systems to develop and implement a utility asset management program and protect against power outages at lift stations ▪ Impose new or stricter bacteria limits than currently designated by TCEQ

Dissolved Oxygen Concentrations	1304	C	<ul style="list-style-type: none"> ▪ Excessive nutrients and organic matter from agricultural production, and related activities ▪ Excessive nutrients and organic matter from WWTF effluent, SSOs, malfunctioning OSSFs, illegal disposal of grease trap waste, and biodegradable solid waste (e.g., grass clippings and pet waste) ▪ Vegetative canopy removed 	<ul style="list-style-type: none"> ▪ Create and implement Water Quality Management Plans for individual agricultural properties ▪ Improve compliance and enforcement of existing stormwater quality permits ▪ Install and/or conserve riparian buffer areas along all waterways ▪ More stringent OSSF maintenance and education ▪ More public education on pet waste disposal ▪ More public education regarding disposal of household fats, oils, and grease ▪ Regionalize chronically non-compliant WWTFs ▪ Improve operation and maintenance of existing WWTF and collection systems ▪ Work with drainage districts and agencies to change practices of clear cutting and channelizing waterways to protect from solar heating
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Segment Discussion:

Watershed Characteristics: The watershed is predominantly rural and undeveloped and includes the small communities of Hawkinsville, Sargent, and Bay City. Residential homes with dock access line Caney Creek Tidal in the southern reaches of the watershed, most of which are serviced by wastewater treatment facilities (WWTF). The dominant land use in the area is agricultural with cattle grazing and horse farms commonly seen throughout. Small, scattered plots of wetland and forested lands are also present, especially in the southern portion of the watershed.

Water Quality Issues: The 2014 Texas Integrated Report (IR) lists the downstream assessment unit of classified water body (segment 1304) and a tributary (1304A_01) as impaired for contact recreational use due to elevated levels of enterococci. The upstream assessment unit of segment 1304 is designated as a concern for near nonattainment. TCEQ assessment data and H-GAC analyses are summarized below:

Assessment Unit	TCEQ Assessment (2005-2012)	HGAC Analysis 2001-2008	HGAC Analysis 2008-2015
	Geomean (MPN/100 mL) / % Grab Exceedance	Geomean (MPN/100 mL) / % Grab Exceedance	Geomean (MPN/100 mL) / % Grab Exceedance
1304_01	49 / NA	51 / 22.2	49 / 25.0
1304_02	47 / NA	43 / 25.0	104 / 33.3
1304A_01	170 / NA	143 / 21.7	165 / 30.8

Assessment Unit 1304_01 has a concern for support of aquatic life use due to depressed dissolved oxygen (DO) in grab samples. The DO concentration in approximately 20% of grab samples was below 3.0 mg/L.

Special Studies/Projects: H-GAC has been tasked by the TCEQ to implement a basin-wide approach for addressing bacterial impairments for the Brazos-Colorado Coastal Basin which includes the Caney Creek watersheds. Development for the basin-wide TMDL began in September of 2015 and will result in a final Basin 13 Summary Report in September of 2016 that will summarize basin characteristics, water quality impairments, potential bacteria sources, and

recommendations for bacterial reduction.

Trends: Regression analysis of water quality data detected 13 statistically significant parameter trends for the two AUs located in the Caney Creek Tidal watershed. Three trends were detected on the main segment including increasing salinity and total Kjeldahl nitrogen (TKN) while [nitrate](#) levels are decreasing over time. Linnville Bayou (1304A), had ten statistically significant trends including increasing alkalinity and decreasing ammonia, chloride, DO, nitrate, Secchi transparency, specific conductance (SPCond), sulfate, temperature, and TKN. Both AUs are currently impaired for bacteria while the main segment also has a concern for DO. Regression analysis for the main segment revealed no significant change in bacteria levels over time during the period of record; however, the majority of samples collected exceed the water quality standard for [enterococci](#). Other than a slight dip in 2010, moving seven-year bacteria geometric means for the [main segment](#) have remained above the 35 MPN/100 mL standard. Moving bacteria geomeans for [Linnville Bayou](#) have fluctuated above the standard since around 2007. Regression analysis of DO data revealed no significant changes for the main segment of [Caney Creek Tidal](#). Linnville Bayou is seeing a gradual [decrease in DO](#) grab concentrations since 2000 with levels reaching as low as 1.0 mg/L in 2014 ,although no DO concern was included in the 2014 Texas Integrated Report,.

Recommendations

Address concerns found in this segment summary through stakeholder participation and by completing the basin-wide TMDL.

Continue collecting water quality data to support actions associated with any future special projects and modeling efforts.
