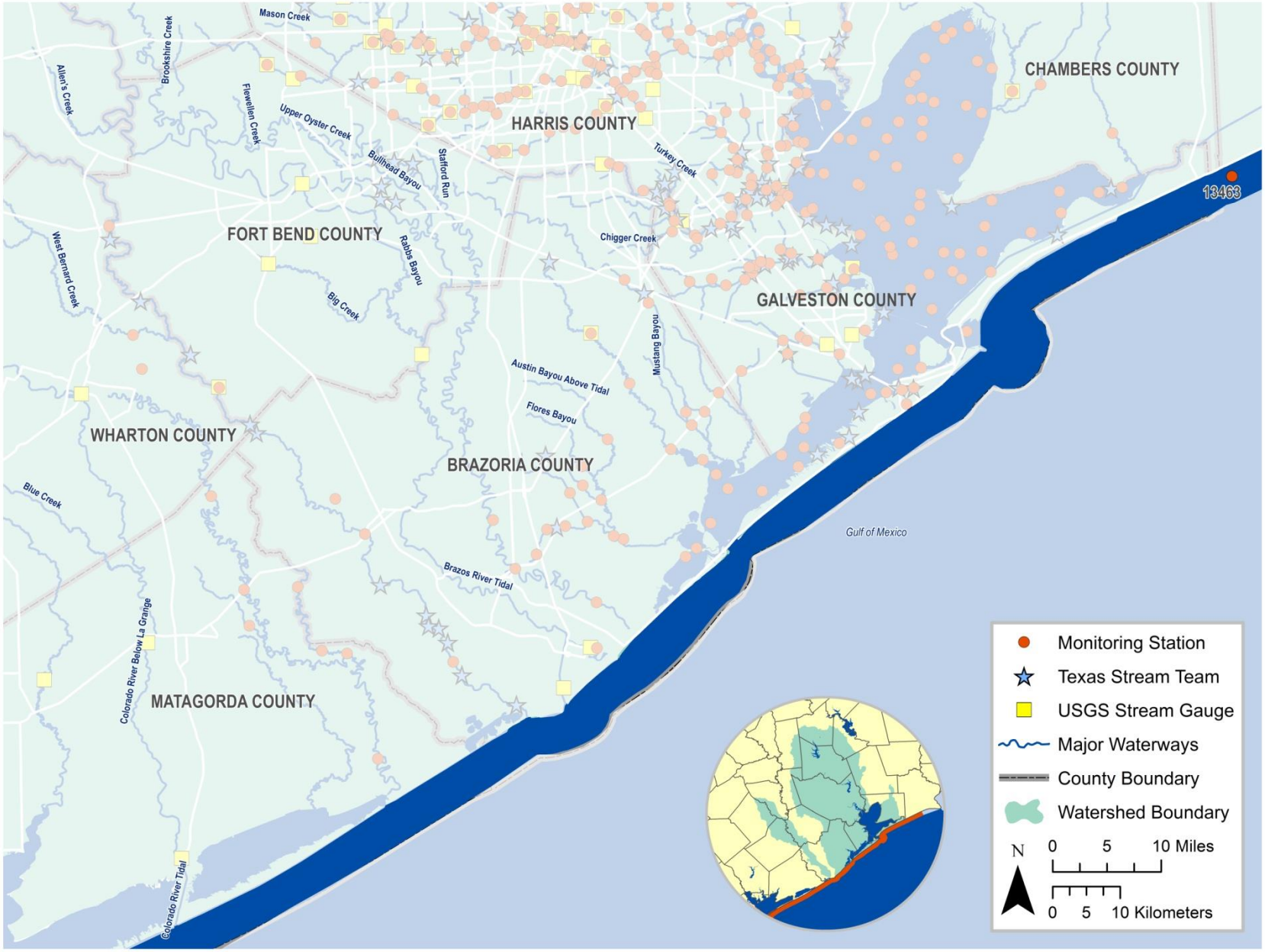
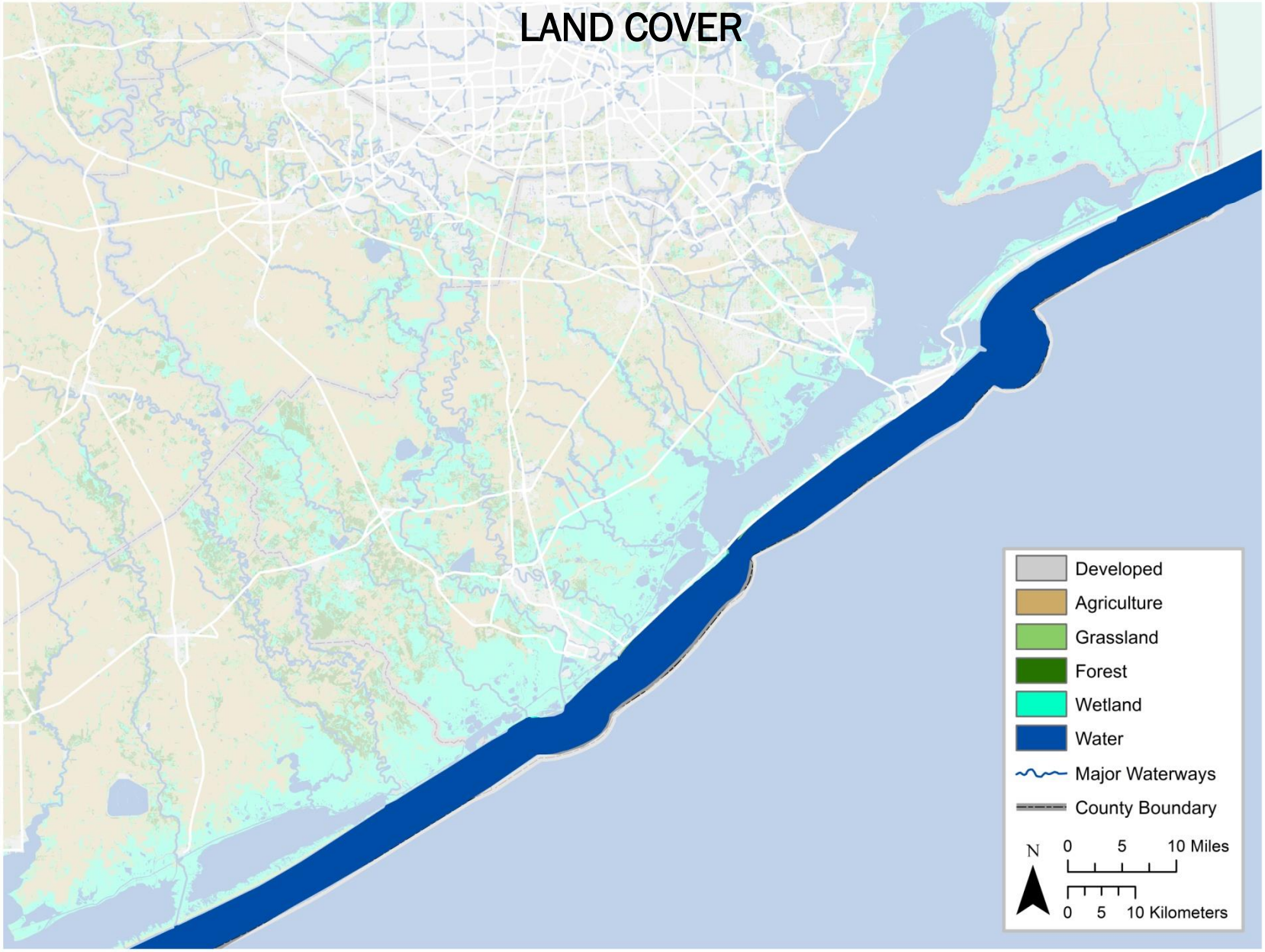
GULF OF MEXICO - SEGMENT 2501



GULF OF MEXICO - SEGMENT 2501

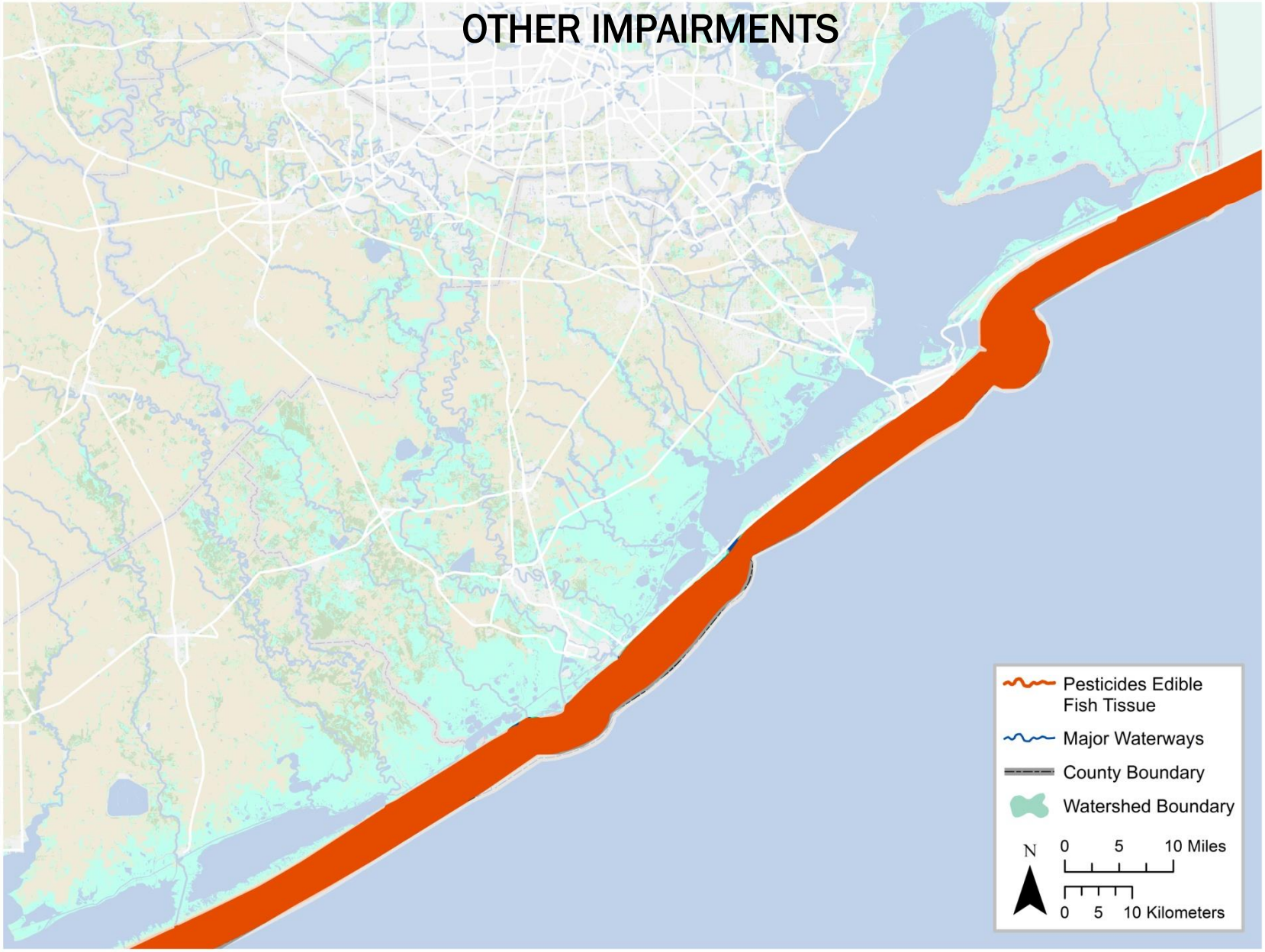
LAND COVER



Impairment Concern No Impairments or Concerns

GULF OF MEXICO - SEGMENT 2501

OTHER IMPAIRMENTS



Segment Number:	2501	Name:	Gulf of Mexico		
Miles of Beach Front:	145 miles	Designated Uses:	Primary Contact Recreation 1; High Aquatic Life		
Number of Active Monitoring Stations:	1	Texas Stream Team Monitors:	0	Permitted Outfalls:	13
Description:	This report addresses only a portion of the Gulf of Mexico along the upper Texas coast from the Jefferson-Chambers County Line south to the mouth of the San Bernard River below Freeport.				

Percent of Stream Impaired or of Concern

Segment ID	PCBs/Dioxin	Bacteria	Dissolved Oxygen	Nutrients	Chlorophyll *a*	Other
2501	-	-	-	-	-	100
2501 (Bolivar Peninsula)	-	100	-	-	100	-

Segment 2501

Standards	Bays & Estuaries	Screening Levels	Bays & Estuaries
Temperature (°C/°F):	35 / 95	Ammonia-N (mg/L):	0.10
Dissolved Oxygen *(24-Hr Average)* (mg/L):	4.0	Nitrate-N (mg/L):	0.17
Dissolved Oxygen *(Absolute Minima)* (mg/L):	3.0	Orthophosphate Phosphorus (mg/L):	0.19
pH (standard units):	6.5-9.0	Total Phosphorus-P (mg/L):	0.21
Enterococci (MPN/100mL) (grab):	104	Chlorophyll *a* (µg/L):	11.6
Enterococci (MPN/100mL) (geometric mean):	35		

FY 2016 Active Monitoring Stations				
Site ID	**Site Description**	**Frequency**	**Monitoring Entity**	**Parameter Groups**
13463	Gulf of Mexico at the Jefferson-Chambers County line	Quarterly	T-CEQ	Conventional, Field, Bacteria, Chlorophyll *a*

Water Quality Issues Summary			
Issue	**2014 Assessment** *I – Impaired C – Of Concern*	**Possible Causes / Influences / Concerns Voiced by Stakeholders**	**Possible Solutions / Actions To Be Taken**
Elevated Levels of Indicator Bacteria	2501 I (Bolivar Peninsula only)	▪ Animal waste from agricultural production, hobby farms, and riding stables ▪ Developments with malfunctioning OSSFs ▪ Waste haulers illegal discharges/improper disposal ▪ Direct and dry weather discharges ▪ Improper or no pet waste disposal ▪ Poorly operated or undersized WWTFs ▪ WWTF non-compliance, overflows, and collection system by-passes	▪ Implement stream fencing or alternative water supplies to keep livestock out of or away from waterways ▪ Encourage Water Quality Management Plans or similar projects for agricultural properties ▪ 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 ▪ More public education on pet waste disposal ▪ Regionalize chronically non-compliant WWTFs ▪ Require all systems to develop and implement a utility asset management program and protect against power outages at lift stations ▪ Increase monitoring requirements for self-reporting ▪ Impose new or stricter bacteria limits than currently designated by TCEQ
Mercury in Edible Fish	2501 I	▪ Legacy pollutant in sediment ▪ Unknown industrial or urban sources,	▪ Continue monitoring fish populations and publicizing advisories

Tissue		possibly including coal fired power plants, coal and wood-fired industrial boilers, hazardous waste combustion, chlorine production, and offshore oil and gas drilling	▪ Continue to contain, remove, and monitor known contaminated sites ▪ Support efforts aimed at reducing mercury emissions from coal-fired power plants ▪ Support the reduced use of industrial mercury
Elevated Chlorophyll *a* Concentrations	2501 C (Bolivar Peninsula only)	▪ Fertilizer runoff from surrounding watershed promotes algal growth in waterways ▪ Nutrient loading from WWTF effluent, SSOs, and malfunctioning OSSFs promotes algal growth	▪ Reduce or manage fertilizer runoff from agricultural areas ▪ Add water quality features to stormwater systems ▪ Improve compliance and enforcement of existing stormwater quality permits ▪ More public education regarding nutrients and consequences

Segment Discussion:

Watershed Characteristics: This segment includes the entire coastal area of the Upper Texas Gulf Coast including the counties of Chambers, Galveston, Brazoria and Matagorda. The part of the coast along Matagorda, Brazoria, and Chambers counties are less densely populated with mostly residential uses along the coast. Brazoria County has a few more densely populated areas – Freeport and Lake Jackson – upstream from the waterways that drain into the Gulf of Mexico. Galveston County has the most densely populated areas along the coast in this portion of the watershed. The entrance to the Galveston and Houston ship channels is between Galveston Island and Bolivar Peninsula and this area is used on a consistent basis by heavy boat and barge traffic. There are a number of heavy industrial sites along the Houston Ship Channel including Texas City, Bayport, and Morgan's Point. The entire stretch along the Gulf of Mexico is used for recreation.

Water Quality Issues: The 2014 Texas IR lists the assessment unit 2501_02 as impaired for contact recreation due to high levels of enterococci bacteria. The TCEQ assessment found that the geomean for this assessment unit to be 327 MPN/100 ml, which is almost 100 times greater than the geomean standard of 35 MPN/100 ml. This assessment unit also has a concern for chlorophyll *a,* with almost 32% of samples exceeding the screening criteria level of 11.6 micrograms per liter.

All portions of segment 2501 along the upper Texas Gulf Coast, including those within the Houston-Galveston Area Council planning region (AU 2501_02 thru AU 2501_04), are not supporting their fish consumption use. These assessment units are once again listed as impaired in the 2014 Texas Integrated Reports (IR) for high levels of mercury found consistently in the edible tissue of fish. Due to the elevated level of mercury the Texas Department of State Health Services issued a Limited Consumption Fish and Shellfish Advisory for this water body.

Special Studies/Projects: This segment was not included as part of any special study or project during the past five years.

Trends: Regression analysis of water quality data for the Gulf of Mexico identified four statistically significant parameter trends including increasing total suspended solids (TSS) and enterococci and decreasing Secchi transparency and pH. The 2014 Texas Integrated Report lists the Gulf of Mexico as impaired for elevated levels of bacteria. Analysis of enterococci for the one active monitoring station located in this segment detected a statistically significant increase in bacteria levels during the period of record. The moving seven year bacteria geometric means for enterococci show levels have been steadily increasing since 2010. In fact, all samples collected since 2010 have exceeded the 35 MPN/100 mL standard with concentrations reaching levels as high as approximately 5,000 MPN/100 mL on a regular basis.

Recommendations
Address concerns found in this segment summary through stakeholder participation.
Continue collecting water quality data to support beach advisories for contact recreation.
Pursue a new local partner to Clean Rivers Program to collect additional data that would help better isolate problem areas.
Work with coastal communities to repair malfunctioning OSSFs and sewer system overflows.