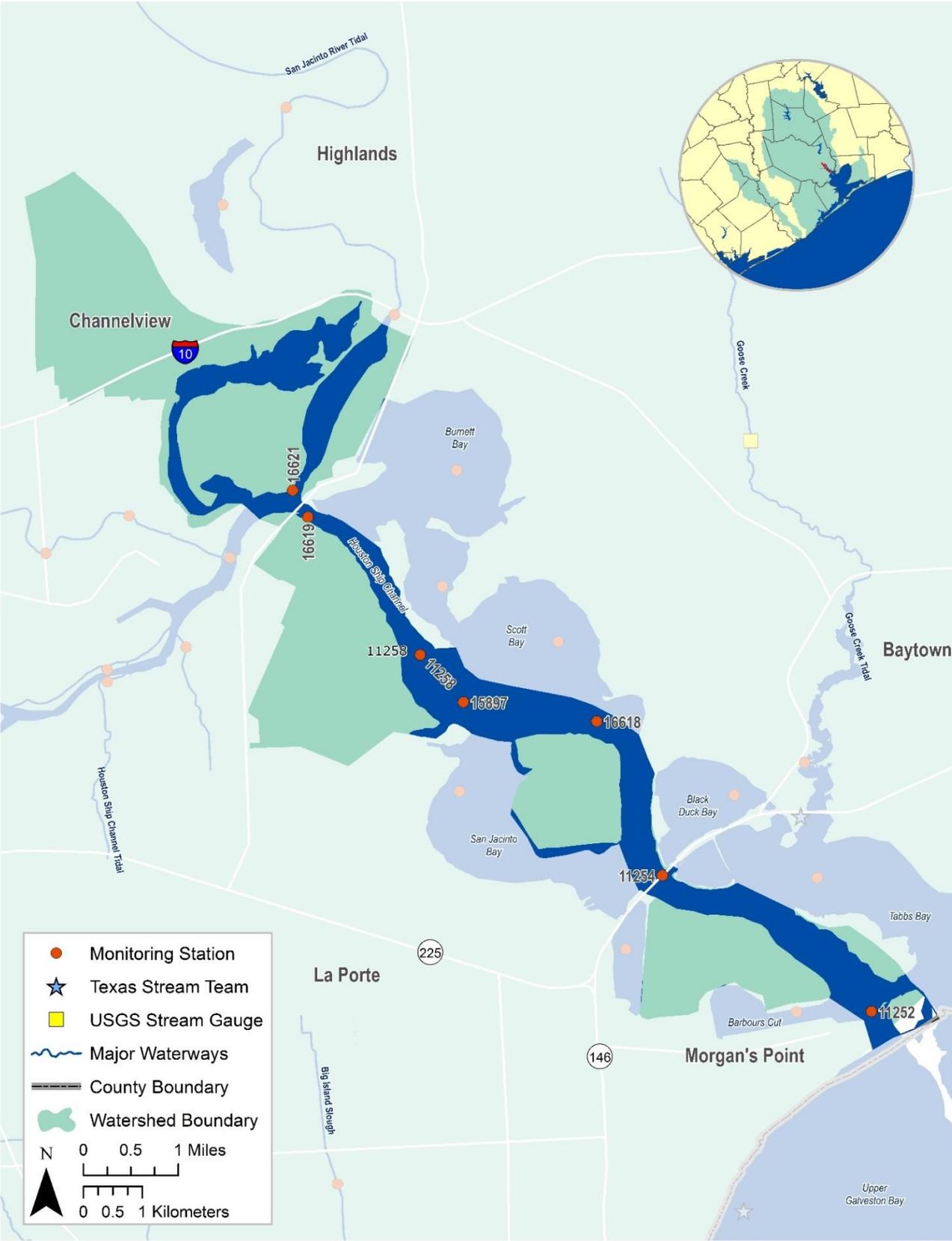
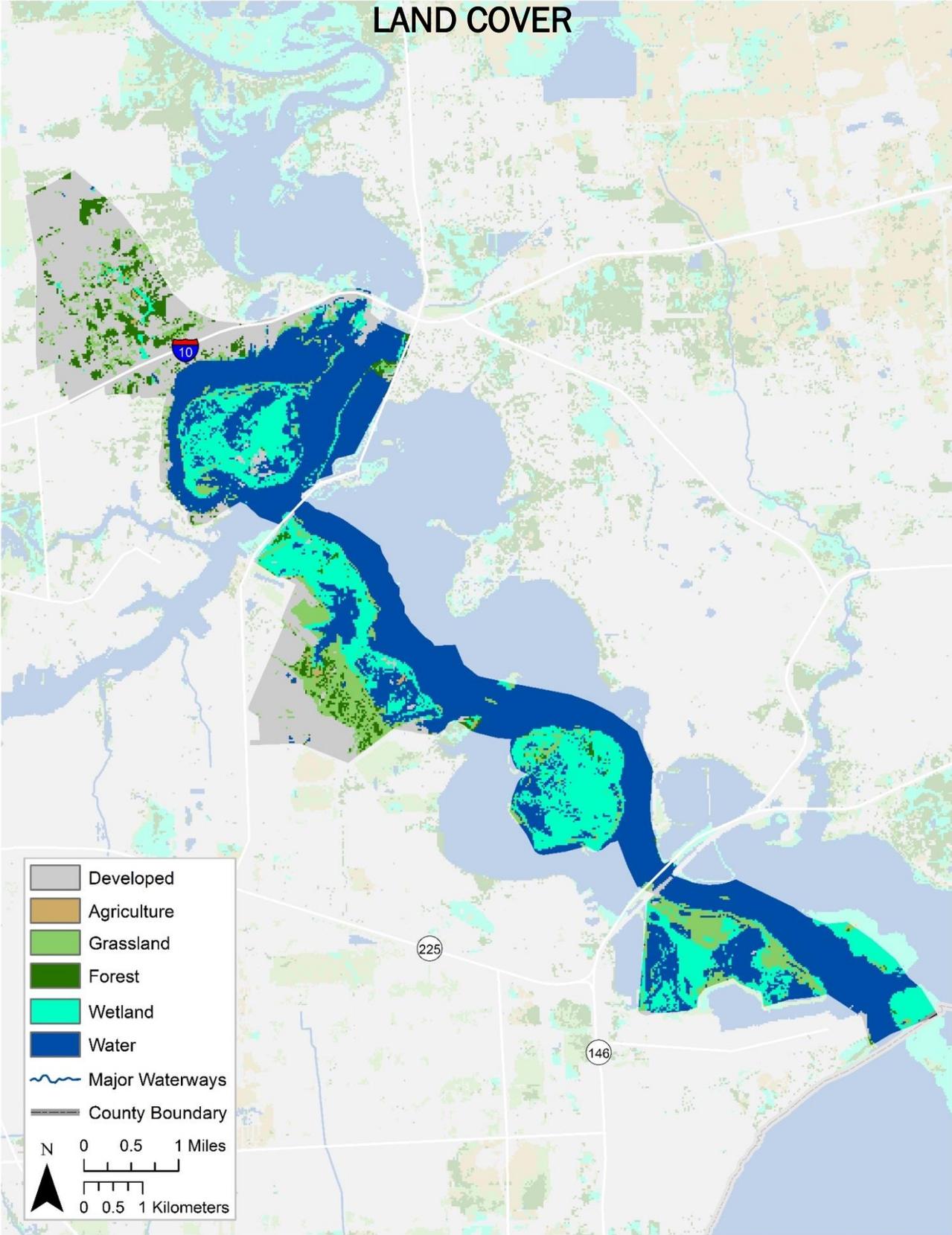


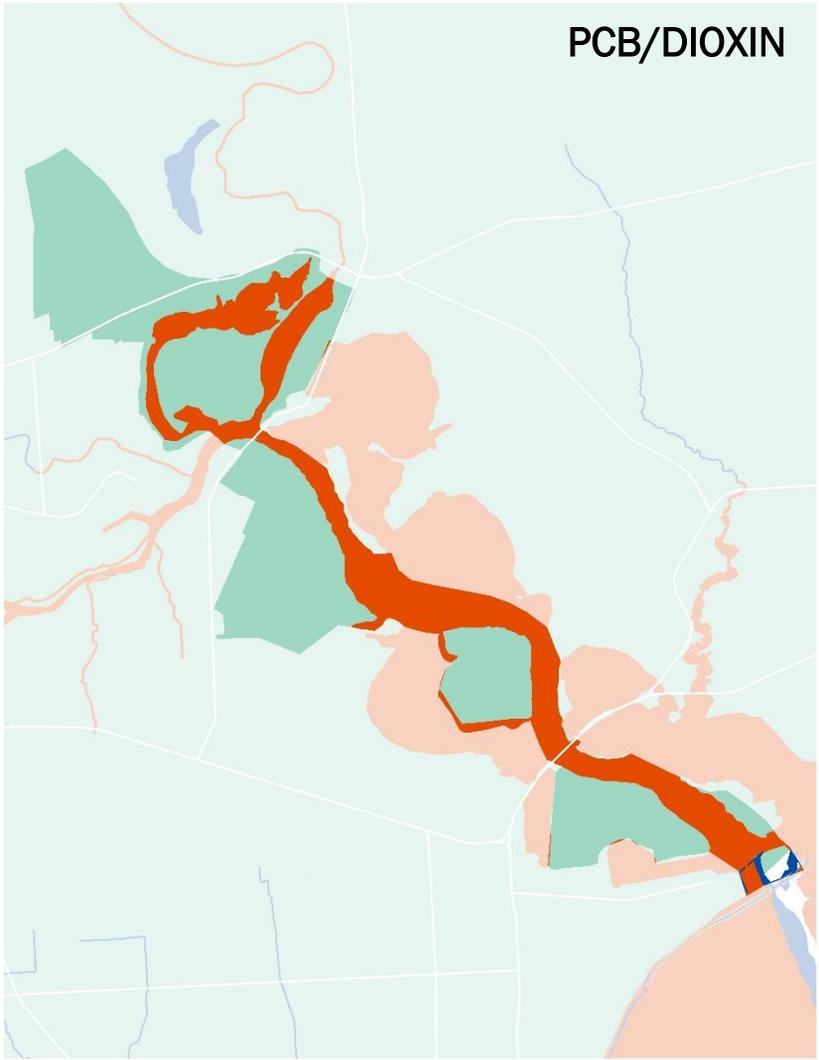
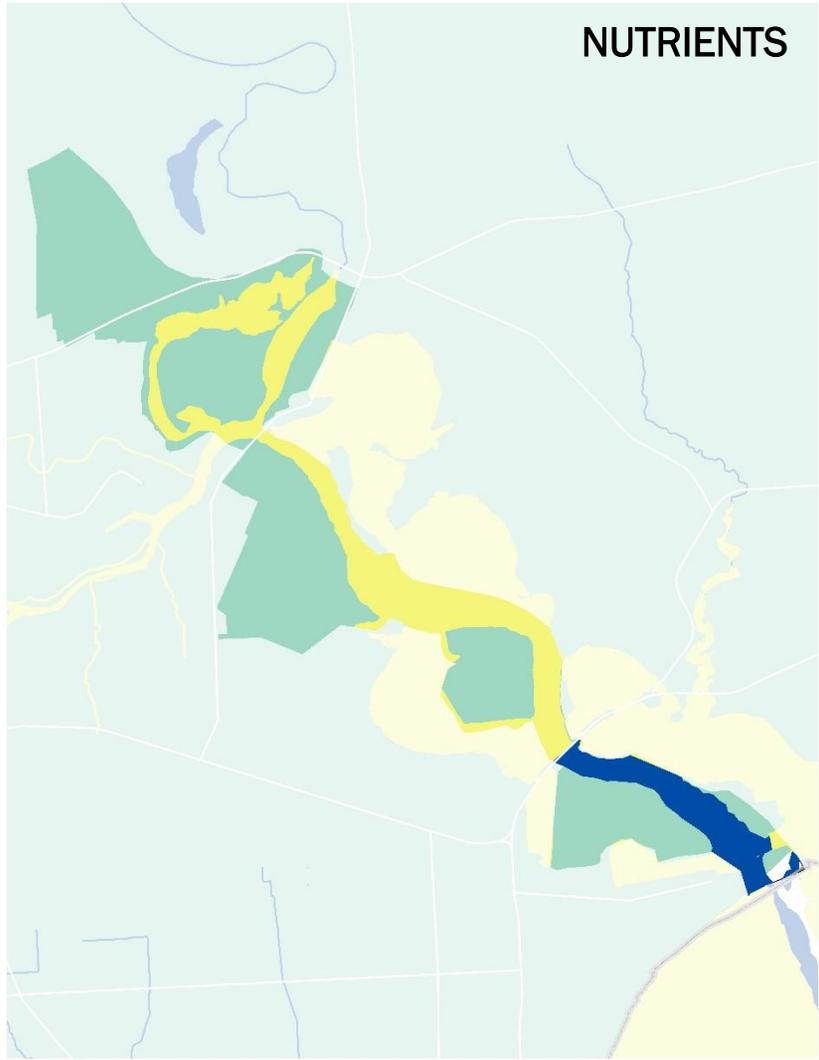
HOUSTON SHIP CHANNEL/SAN JACINTO RIVER - SEGMENT 1005



HOUSTON SHIP CHANNEL/SAN JACINTO RIVER - SEGMENT 1005

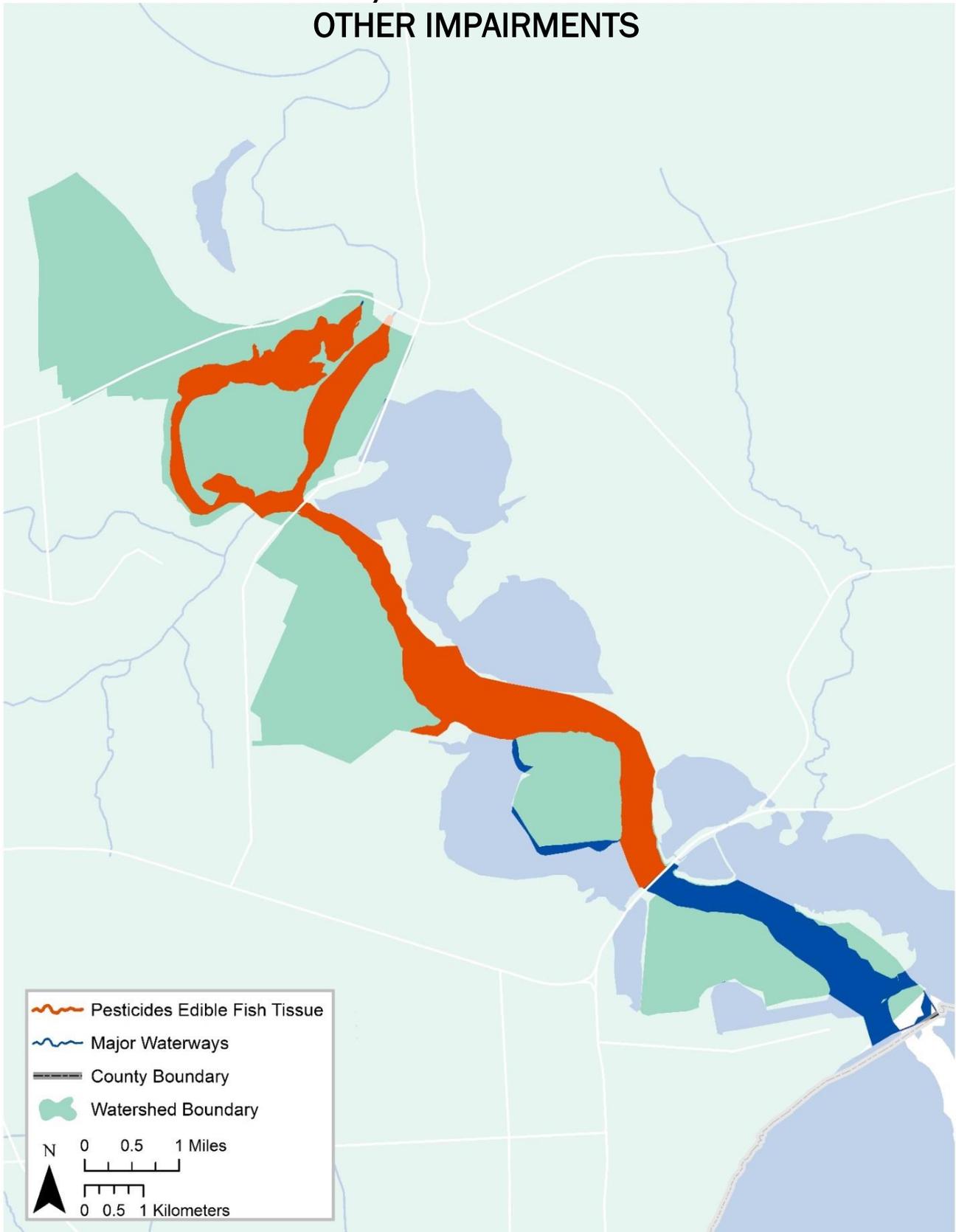
LAND COVER





 Impairment  Concern  No Impairments or Concerns

HOUSTON SHIP CHANNEL/SAN JACINTO RIVER - SEGMENT 1005 OTHER IMPAIRMENTS



Segment Number:	1005	Name:	Houston Ship Channel / San Jacinto River		
Length:	23 miles	Watershed Area:	17 square miles	Designated Uses:	Noncontact Recreation; High Aquatic Life Use
Number of Active Monitoring Stations:	6	Texas Stream Team Monitors:	0	Permitted Outfalls:	23
Description:	Segment 1005 (Tidal Stream) From the confluence with Galveston Bay at Morgan's Point in Harris/Chamber County to a point 100 meters (110 yards) downstream of Interstate Highway 10 in Harris County				

Percent of Stream Impaired or of Concern						
Segment ID	PCBs/Dioxin	Bacteria	Dissolved Oxygen	Nutrients	Chlorophyll a	Other
1005	100	-	-	73	-	73

Segment 1005			
Standards	Tidal Stream	Screening Levels	Tidal Stream
Temperature (°C/°F):	35 / 95	Ammonia-N (mg/L):	0.46
Dissolved Oxygen (24-Hr Average) (mg/L):	4.0	Nitrate-N (mg/L):	1.10
Dissolved Oxygen (Absolute Minima) (mg/L):	3.0	Orthophosphate Phosphorus (mg/L):	0.46
pH (standard units):	6.5-9.0	Total Phosphorus-P (mg/L):	0.66
Enterococci (MPN/100mL) (grab):	104	Chlorophyll a (µg/L):	21
Enterococci (MPN/100mL) (geometric mean):	35		

FY 2016 Active Monitoring Stations				
Site ID	Site Description	Frequency	Monitoring Entity	Parameter Groups
11252	Houston Ship Channel at Morgan's Point	Quarterly	TCEQ	Field, Conventional, Bacteria, Chlorophyll a
11254	Houston Ship Channel at Baytown Tunnel	Monthly	HCPCS	Field, Conventional, Bacteria,
11258	Houston Ship Channel at CM 120	Quarterly	TCEQ	Field, Conventional, Bacteria, Chlorophyll a
16618	HSC/SJR at Exxon Docks	Monthly	HCPCS	Field, Conventional, Bacteria
16619	HSC at Lynchburg Ferry Inn	Monthly	HCPCS	Field, Conventional, Bacteria
16621	SJR Tidal at mouth of HSC	Monthly	HCPCS	Field, Conventional, Bacteria

Water Quality Issues Summary

Issue	2014 Assessment <i>I – Impaired C – Of Concern</i>	Possible Causes / Influences / Concerns Voiced by Stakeholders	Possible Solutions / Actions To Be Taken
Elevated Nutrients	1005 C	<ul style="list-style-type: none"> ▪ Fertilizer runoff from urbanized properties, such as landscaped areas, residential lawns, and sport fields ▪ Agricultural runoff from row crops, fallow fields, and animal operations ▪ WWTF effluent, sanitary sewer overflows, and malfunctioning OSSFs 	<ul style="list-style-type: none"> ▪ Implement YardWise and Watersmart landscape practices ▪ Encourage Water Quality Management Plans for individual agricultural properties ▪ Install and/or maintain riparian buffer areas between agricultural fields and waterways ▪ Monitor phosphorus levels at WWTFs to determine if controls are needed
PCBs/Dioxin in Edible Fish Tissue	1005 I	<ul style="list-style-type: none"> ▪ Concentrated deposits outside boundaries of the waste pits located adjacent to San Jacinto River and I-10 bridge ▪ Waste pit located along the San Jacinto River immediately upstream of I-10 bridge ▪ Unknown industrial or urban sources 	<ul style="list-style-type: none"> ▪ Encourage regulators and responsible parties to work together to remediate Superfund site ▪ Remove or contain contamination from locations already identified ▪ Encourage additional testing to locate all unknown sources/deposit
Pesticides in Edible Fish Tissue	1005 I	<ul style="list-style-type: none"> ▪ Fertilizer runoff from urbanized properties, such as landscaped areas, residential lawns, and sport fields ▪ Agricultural runoff from row crops 	<ul style="list-style-type: none"> ▪ Implement YardWise and Watersmart landscape practices ▪ Encourage Water Quality Management Plans for individual agricultural properties ▪ Install and/or maintain riparian buffer areas between agricultural fields and waterways

Segment Discussion

Watershed Characteristics: This watershed includes the Cities of Baytown and Highlands and flows along the eastern shore of the Cities of Channelview, Deer Park, and La Porte. It is highly industrialized and also has a lot of residential and commercial development, especially along the shoreline. The Houston Ship Channel (HSC) supports heavy boat and barge traffic on a consistent basis. Bordering the HSC are several side bays which are classified as separate segments. These side bays include: Burnet Bay (2430), Scott Bay (2429), Upper & Lower San Jacinto Bay (2427), Black Duck Bay (2428), Tabbs Bay (2426), and Barbour's Cut (2436) serving Morgan's Point. Goose Creek, a fairly large unclassified water body which drains into Tabbs Bay. About one-half of the Goose Creek watershed is grasslands, and approximately one third of the watershed is a mix of high- and low-intensity development.

Water Quality Issues: The primary impairments in segment 1005 (Houston Ship Channel/San Jacinto River Tidal) are dioxin and PCB in the edible tissue of fish. Chlordane, dieldrin, and heptachlor epoxide have also been detected at hazardous concentrations in fish tissue taken from all of the segment's four assessment units. Due to the elevated levels of dioxin and PCBs, the Texas Department of State Health Services issued a Limited Consumption Fish and Shellfish Advisory for this water body.

Nitrate nitrogen (nitrate) is identified as a concern in assessment units 1005_01, _02, and _03. The 2014 TCEQ assessment found screening level exceedance percentages of 57, 32, and 44 percent respectively. H-GAC analysis for the seven-year period ending 5/31/15 showed no significant change (59, 40, and 32 percent respectively).

Special Studies/Projects: This segment is included in two TMDL projects, the Houston Ship Channel and Upper Galveston Bay TMDL for PCBs in Fish Tissue and the Houston Ship Channel TMDL for Dioxin, which are currently under way. For more information, please refer to the detailed discussions located in the Public Involvement and Outreach section of the 2016 Basin Summary Report.

Trends: Ten statistically significant parameter trends were detected for the HSC / San Jacinto River Tidal watershed including increasing alkalinity, nitrate, salinity, Secchi transparency, specific conductance (SPCond), sulfate, total dissolved solids (TDS), and total phosphorous (TP) while ammonia and chlorophyll *a* were the only parameters decreasing over time. The most common trends seen throughout the watershed and majority of monitoring stations were increasing salinity, SPCond, Secchi transparency, and TDS. Reasons for this steady rise in dissolved constituents in water might include an increased volumetric contribution of wastewater effluent, improvements to storm water controls in the area, or increased tidal influences from Galveston Bay and the Gulf of Mexico.

Regression analysis of nutrient data revealed increasing trends in [nitrate](#) and [TP](#). Nitrate is of greater concern because concentrations are regularly exceeding the screening criteria of 1.10 mg/L while TP, although slightly increasing over time, remains well below the recommended 0.66 mg/L for the majority of samples collected. The same assessment unit with a nutrient concern has a restricted fish consumption designation due to pesticides in edible fish tissue. Considering dominant land uses within the watershed are developed industrial and residential, the origin of nutrients and pesticides in water are likely attributed to effluent discharges and runoff from over fertilized yards and landscaping in the developed areas of Baytown, Highlands, Channelview, Deer Park, and La Porte. Decreasing trends in ammonia, chlorophyll *a*, and *E. coli* were also observed at some monitoring stations within the segment.

Recommendations

Address concerns found in this segment summary through stakeholder participation.

Continue collecting water quality data to support actions associated with any future watershed protection plan development and possible modeling.

Pursue a new local partner to Clean Rivers Program to collect additional data that would help better isolate problem areas.