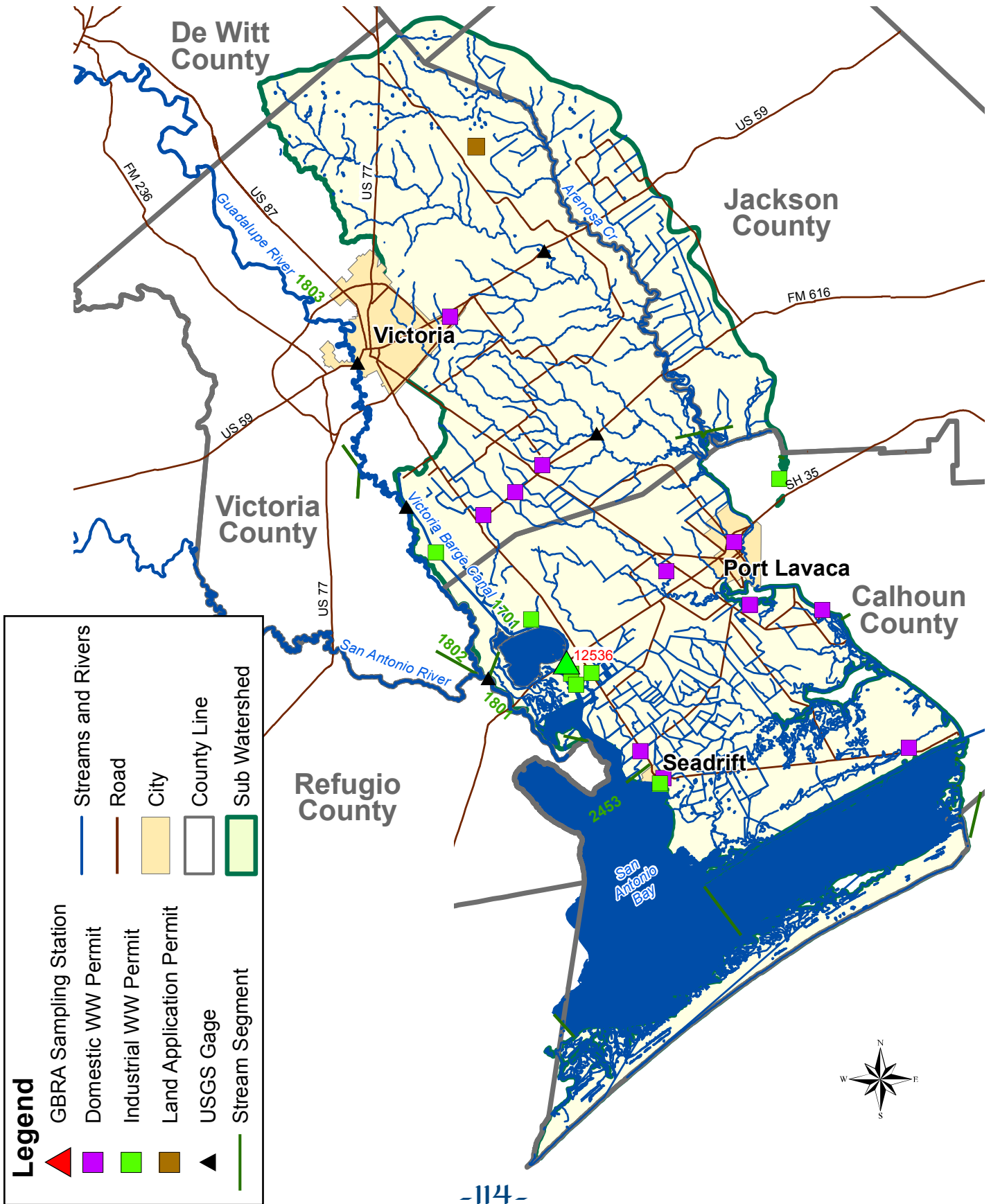


# Lavaca-Guadalupe Coastal Basin



# Lavaca-Guadalupe Coastal Basin

## River Segments, Descriptions and Concerns

**Segment 1701** (Victoria Barge Canal): From the Victoria Turning Basin in Victoria County to the confluence with San Antonio Bay in Calhoun County.

**Drainage Area:** 998 square miles

**Streams and Rivers:** Guadalupe River, Garcitas Creek, Victoria Barge Canal, Mercado Creek, Arenosa Creek

**Aquifer:** Gulf Coast

**River Segments:** 1701

**Cities:** Victoria, Seadrift, Bloomington, Inez, Port O'Connor, Port Lavaca

**Counties:** Calhoun, Victoria, Jackson

**EcoRegion:** Gulf Coastal Plains

**Vegetation Cover:** Pasture/Hay 15.1%, Shrublands 16.9%, Row Crops 21.4%, Grass/Herbaceous 13.7%, Deciduous Forest 8.4%, Wetlands 17.2%

**Climate:** Average annual rainfall 42 inches, Average annual temperature January 44°, July 93°

**Land Uses:** Agriculture row crops (cotton, corn, rice and grain sorghum), urban, recreation, oil and gas production, cattle, hog and poultry production and industry (plastics, chemicals, petrochemicals)

**Water Body Uses:** Aquatic life, non-contact recreation, fish consumption and industrial cooling

**Soils:** Clay subsoils, deep black soil, sandy clay, dark clay loam, clay

**Permitted Wastewater Treatment Facilities:** Domestic 11, Land Application 1, Industrial 7



Photo by Janet Thome

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## River Segments, Descriptions and Concerns

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Segment 1701, the **Victoria Barge Canal**, extends from the turning basin downstream to the confluence with the San Antonio Bay. The TCEQ Region 14 has one monitoring location in the Barge Canal. The station has been monitored from 2003 to 2012. The regional office crew monitored the station quarterly.

The barge canal is used by industries for both barge traffic and waste discharge. Several industries, such as Union Carbide and BP Chemical, discharge permitted waste to the water body. The water body has been listed with concern for nitrate nitrogen and chlorophyll a concentrations. The designated use is listed as non-recreational. The impairment for aquatic life support because of dissolved oxygen concentrations was lifted after diurnal monitoring collected additional data and showed sufficient dissolved oxygen to support aquatic life use.

Field parameters were collected over the period of record, and through the water column, at depths of 0.3 meter (m) through 5 m. The following table shows the median values for each field parameter by depth, measured over the period of record:

The canal is brackish, uniform in pH, temperature and dissolved oxygen through the water column, some density stratification from surface to bottom.

Conventional parameters were collected at the surface, within 0.3 m. The **total suspended solids** ranged from 4 milligrams per liter (mg/L) to 93 mg/L, with a median concentration of 30 mg/L.

The 2012 Texas Water Quality Inventory listed the barge canal with concerns for chlorophyll a and nitrate nitrogen. The **nitrate nitrogen** concentrations ranged between 0.05 mg/L to 1.04 mg/L, with a median concentration of 0.20

mg/L. The screening concentration for nitrate nitrogen in estuarine environments is 0.66 mg/L.

The Victoria Barge Canal exceeded this screening concentration 14 times out of 26 measurements. The **ammonia nitrogen** concentrations ranged from below the Limit of Quantification (LOQ) to 0.30 mg/L, with a median concentration of 0.05 mg/L. The station exceeded the screening criteria 2 times. **Total phosphorus** concentrations ranged from 0.05 to 0.30 mg/L, with a median concentration of 0.17 mg/L. From 2003 to 2012 there is very little change in the phosphorus concentrations and no significant trend is indicating a degrading water quality. **Chlorophyll a** concentrations ranged from below the LOQ to 56.1 micrograms per liter. Three measurements fell outside the screening concentration of 14.4 micrograms per liter.

No stakeholders have voiced concerns with the Barge Canal. General concerns for water quality and the impact of barge traffic, chemical pipelines and industrial discharge quality would apply. 🌿

Median Values For Each Field Parameter by Depth Measured Over the Period of Record					
Depth	Conductivity	pH	Dissolved Oxygen	Temperature	Salinity
0.3 m (surface)	6930	7.8	8.1	27.6	4.0
0.31 - 1.0 m	6230	7.7	8.0	27.5	3.4
1.1 - 2.0 m	6480	6.9	8.0	27.2	3.6
2.1 - 3.0 m	4200	8.0	8.3	25.0	3.5
31.0 - 5.0 m	2570	7.3	8.3	28.0	1.4

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River Segments, Descriptions and Concerns

