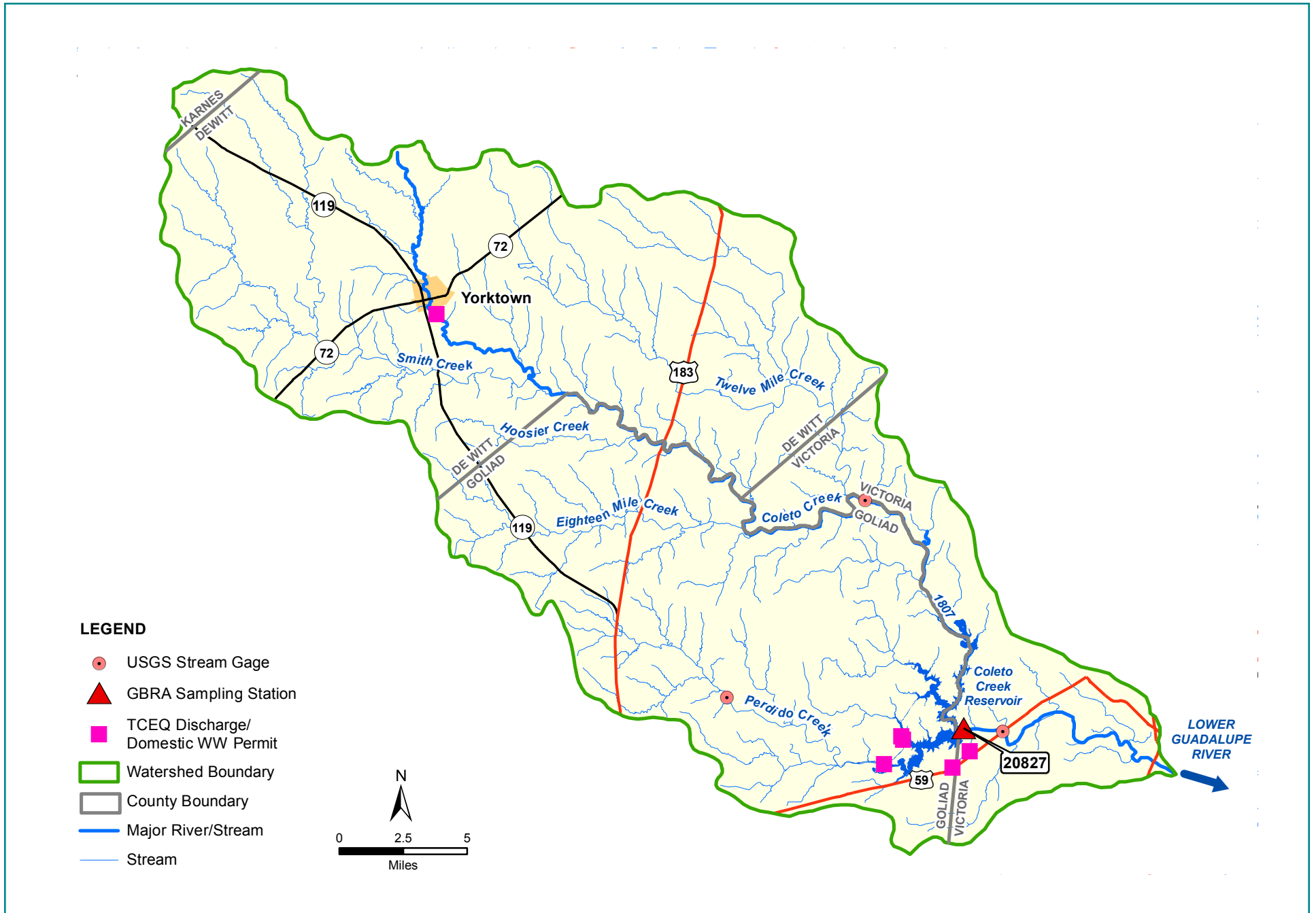
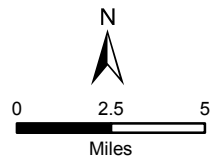


COLETO CREEK



LEGEND

- USGS Stream Gage
- ▲ GBRA Sampling Station
- TCEQ Discharge/
Domestic WW Permit
- ▭ Watershed Boundary
- ▭ County Boundary
- Major River/Stream
- Stream



COLETO CREEK

Segment 1807: (Coletto Creek) Coletto Creek extends 27 miles beginning in Dewitt County, through Goliad and Victoria Counties, to the confluence with the Guadalupe River in Victoria County. This segment includes the 3100-acre Coletto Creek Reservoir. The size of Coletto Creek's drainage basin can turn this normally slow moving creek into a fast flowing river during a typical South Texas rainstorm. Much of the creek bottom is sandy, with typical vegetation ranging from brush trees such as mesquite and huisache to large live oaks and anacua trees. The rural setting and limited development of this watershed supports a wide range of Texas wildlife along its shores ranging from turkey and deer, to red fox and bobcats. The completion of the Coletto Creek Reservoir provided habitat to support over 100 different species of birds, such as the Southern Bald Eagle, Osprey, and Roseate Spoonbills.

This segment has one routine station (20827), monitored monthly by GBRA at the midpoint of the dam on the Coletto Creek Reservoir. The water at this monitoring station is over 10 meters deep and depth profiles at the station have shown that the Coletto Reservoir undergoes typical large lake seasonal stratification patterns for temperature and dissolved oxygen. Stratification occurs during the summer months as waters near the surface become less dense due warmer temperatures while the water near the bottom remain more

dense and cool. Mixing occurs during the fall as the cooler temperatures of the waters at the surface begin to match the temperatures of the waters at the bottom. The 2014 Texas Integrated Report of Water Quality did not identify any impairments or concerns in either of the assessment units that are evaluated for this segment. Coletto Creek Reservoir is used as cooling water by a coal-fired power plant. The Power Plant contributes to increased ambient temperatures in the reservoir, which influences recreational fishing opportunities throughout the

year. Stakeholders remain concerned about the possible impacts of in-situ groundwater uranium mining activities located in the northwest portion of Goliad County. The area of concern is located in the recharge zone of the Evangeline component of the Gulf Coast Aquifer. Residents fear that the recent issuance of an EPA mining permit to Uranium Energy Corp. (UEC) will lead to contamination of surface water and underground drinking water supplies in the area. Other activities that have the potential to impact water quality in the



CONTINUED ON PAGE 124

Coletto Creek

Drainage Area: 558 square miles

Length: 27 miles

Tributaries: Turkey Creek, Sulphur Creek, and Perdido Creek (1807A)

Aquifer: Gulf Coast

River Segments: 1807

Cities and Communities: Yorktown

Counties: Dewitt, Goliad, Victoria

EcoRegion: Texas Blackland Prairies, Gulf Coastal Plains

Climate: Average annual rainfall 36.77 inches, Average annual temperature 70.15 °F

Vegetation Cover: Evergreen Forest 2.66%, Deciduous Forest 16.04%, Shrubland 23.70%; Grassland 3.36%; Woody Wetlands: 2.84% Cultivated Crops 3.00% ; Pasture Hay 41.85%

Land Uses: Agricultural, ranching, hogs, poultry, oil and gas production

Development: Low Intensity 0.26% ; Medium Intensity 0.04%; High Intensity 0.01%; Open Space 4.53%

Water Body Uses: aquatic life, contract recreation, general use, fish consumption, and power plant cooling.

Soils: Sandy, sandy loam, and clay loam

Permitted Wastewater Treatment Facilities: Domestic 2, Land Application 0, Industrial 1

COLETO CREEK

area include increased oil field mining, new subdivision development and the introduction of invasive aquatic plants. An analysis of the water quality data at monitoring station 20827 revealed several trends over time. The chlorophyll A concentrations (Figure 1) at this station are significantly increasing over time. The TKN concentrations are also significantly increasing over time (Figure 2). These two water quality trends may be linked in that the increase in TKN may indicate that more nitrogen is entering the lake

system to provide for the growth of green algae that contain chlorophyll A pigment. The source of additional nutrient loading in the Coletto Creek reservoir remain unclear, but are most likely associated with runoff from agricultural fertilizers in the watershed. The relatively short length of monitoring data available at this station may have caused these trends to be particularly pronounced due to increases in runoff following the drought years at the beginning of the data set.



COLETO CREEK

Table 1

Station 20827 - Coletto Creek Reservoir at Center of Dam 09/2010 - 11/2016					
AU 1807_02 General Use					
Parameter	Mean	Maximum	Minimum	# of Measurements	Screening Criteria
Temperature (°C) at 0.3 meters	23.6	34.9	12.6	106	33.90
Temperature (°C) at all depths	23.8	34.9	12.4	352	33.90
pH at 0.3 meters	8.2	8.8	7.2	106	6.5 - 9.0
pH at all depths	8.0	8.8	6.8	352	6.5 - 9.0
Chloride (mg/L)	55	93	8.3	75	250.00
Sulfate (mg/L)	26	50	5.2	75	100.00
Total Dissolved Solids (mg/L) at 0.3 meters	451	708	191	106	500.00
Total Dissolved Solids (mg/L) at all depths	477	708	191	352	500.00
NH3-N (mg/L)	0.18	0.76	<0.10	39	0.33
Total Phosphorus (mg/L)	0.60	2.69	<0.05	176	0.69
Chlorophyll-a (µg/L)	8.7	28.8	<1.0	74	14.1
Nitrate Nitrogen (mg/L)	0.06	0.24	<0.05	74	1.95
TKN (mg/L)	0.79	1.36	0.20	51	N/A
AU 1807_02 Recreational Use					
<i>E. coli</i> (MPN/100 mL)	4 Geomean	380	<1	74	126 Geomean
AU 1807_02 Aquatic Life Use					
Dissolved Oxygen (mg/L) at 0.3 meters	8.0	11.2	2.5	106	≥3.0 Minimum & ≥5.0 Average
Dissolved Oxygen (mg/L) at all depths	6.0	11.2	0.1	352	≥3.0 Minimum & ≥5.0 Average

Figure 1

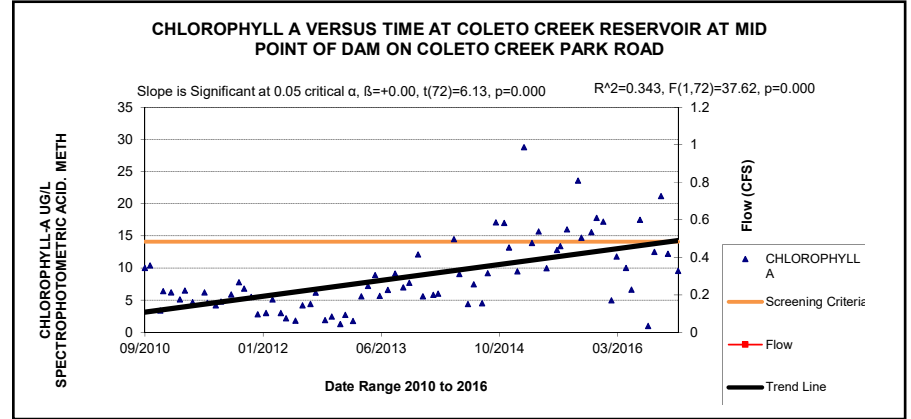


Figure 2

