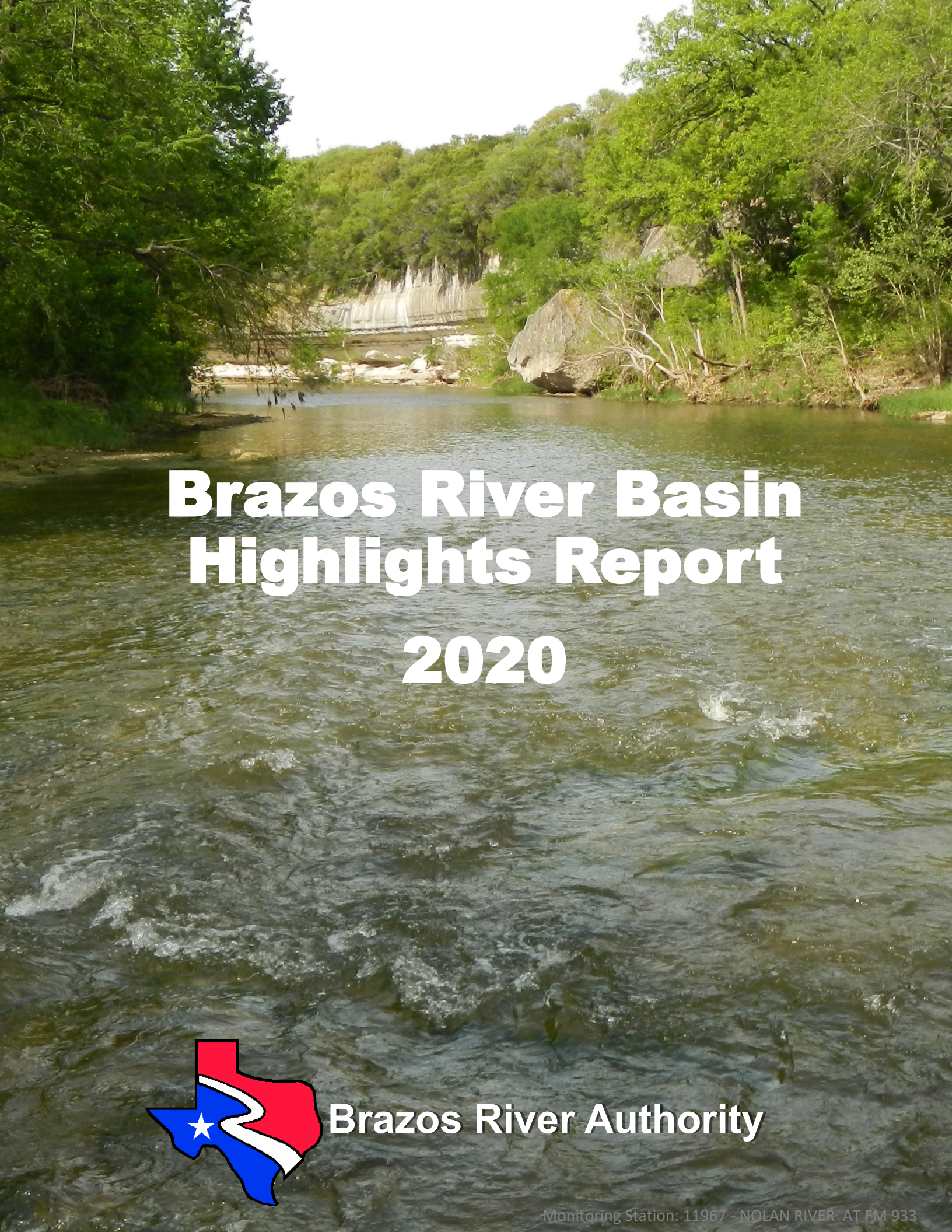


Brazos River Basin Highlights Report 2020

Brazos River Authority

Monitoring Station: 11967 - NOLAN RIVER AT FM 933

Brazos River Basin Highlights Report 2020

Introduction

For the 2020 Brazos River Basin Highlights Report, a watershed characterization type report was created. The 14 major subwatersheds of the Brazos River Basin are subdivided into a total of 134 smaller subwatersheds based on the United States Geological Survey (USGS) generated 10-digit Hydrologic Unit Codes (HUC10). This Basin Highlights Report focuses on 4 major subwatersheds, the Salt and Double Mountain Forks of the Brazos River, the Clear Fork of the Brazos River, the Upper Watershed of the Brazos River and the Lampasas River Watershed. This report characterizes 23 HUC10-delineated subwatersheds (referred to as watersheds for the remainder of the report). These watersheds all contain waterbody segments included on the 303(d) List as impaired in the 2018 Integrated Report (IR). The following headings and figures are included in each watershed characterization:

Watershed Description:
The full name of the watershed is given and area of watershed in square miles.

Land Use Land Cover in Watershed:
A figure is presented showing land use and land cover in the watershed. Land use land cover (LULC) was acquired for the Unites States Geological Survey (USGS) using the most recent, 2016 edition of National Land Cover Data (NLCD) land cover layer for the contiguous United States. Percentage surface areas of each LULC class are calculated for each watershed. For purposes of this report, LULC classes used are:

- **Developed** - Includes areas with a mixture of constructed materials, and vegetation in the form of lawn grasses and impervious surfaces. These areas include single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes, also, apartment complexes, row houses and commercial/industrial areas.
- **Planted/Cultivated -** Areas of grasses, legumes, or grass-legume mixtures planted for livestock grazing or the production of seed or hay crops, typically on a perennial cycle. Pasture/hay vegetation accounts for greater than 20 percent of total vegetation. This class also includes areas used for the production of annual crops, such as corn, soybeans, vegetables, tobacco, and cotton, and also perennial woody crops such as orchards and vineyards. Crop vegetation accounts for greater than 20 percent of total vegetation. All land being actively tilled is also included in this class.
- **Herbaceous/Shrub -** Areas dominated by shrubs; less than 5 meters tall with shrub canopy typically greater than 20% of total vegetation. This class includes true shrubs, young trees in an early successional stage or trees stunted from environmental conditions. This class also includes areas dominated by grammanoid or herbaceous vegetation, generally greater than 80% of total vegetation. These areas are not subject to intensive management such as tilling, but can be utilized for grazing.
- **Forest** - areas dominated by trees generally greater than 5 meters tall, and greater than 20% of total vegetation cover.
- **Wetland -** Areas where forest or shrub land vegetation accounts for greater than 20 percent of vegetative cover and the soil or substrate is periodically saturated with or covered with water and areas where perennial herbaceous vegetation accounts for greater than 80 percent of vegetative cover and the soil or substrate is periodically saturated with or covered with water.
- **Water** - all areas of open water, generally with less than 25% cover or vegetation or soil.
- **Barren** - barren areas of bedrock, scarps, talus, slides, sand dunes, strip mines, gravel pits and other accumulations of earthen material. Generally, vegetation accounts for less than 15% of total cover.

Segments in Watershed:

Each assessment unit (AU) in the watershed is listed with a full name description. If there are stations in the watershed monitored in fiscal year (FY) 2020, the station is listed with a full name description. Where available, pictures accompany stations monitored as well as selected segments with no FY 2020 monitoring stations. Pictures generally represent the downstream perspective.

Impairments in Watershed Description:

If an AU in the watershed is impaired in the 2018 Integrated Report (IR), the type of impairment and/or the parameter of concern is listed.

Possible Contributions if Impaired:

Point Sources: Identifies possible point source contributions to the impairment.
Non-point sources: Identifies possible non-point source contributions to the impairment.

Potential non-State Agency Stakeholders:

Listed are entities that operate within the watershed that would potentially have a vested interest in water quality issues.

Actions taken if Impaired:

If actions are being taken to address the impairment in the watershed, they are listed here.

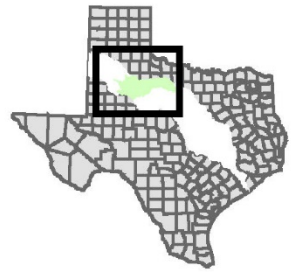
Recommendations if Impaired:

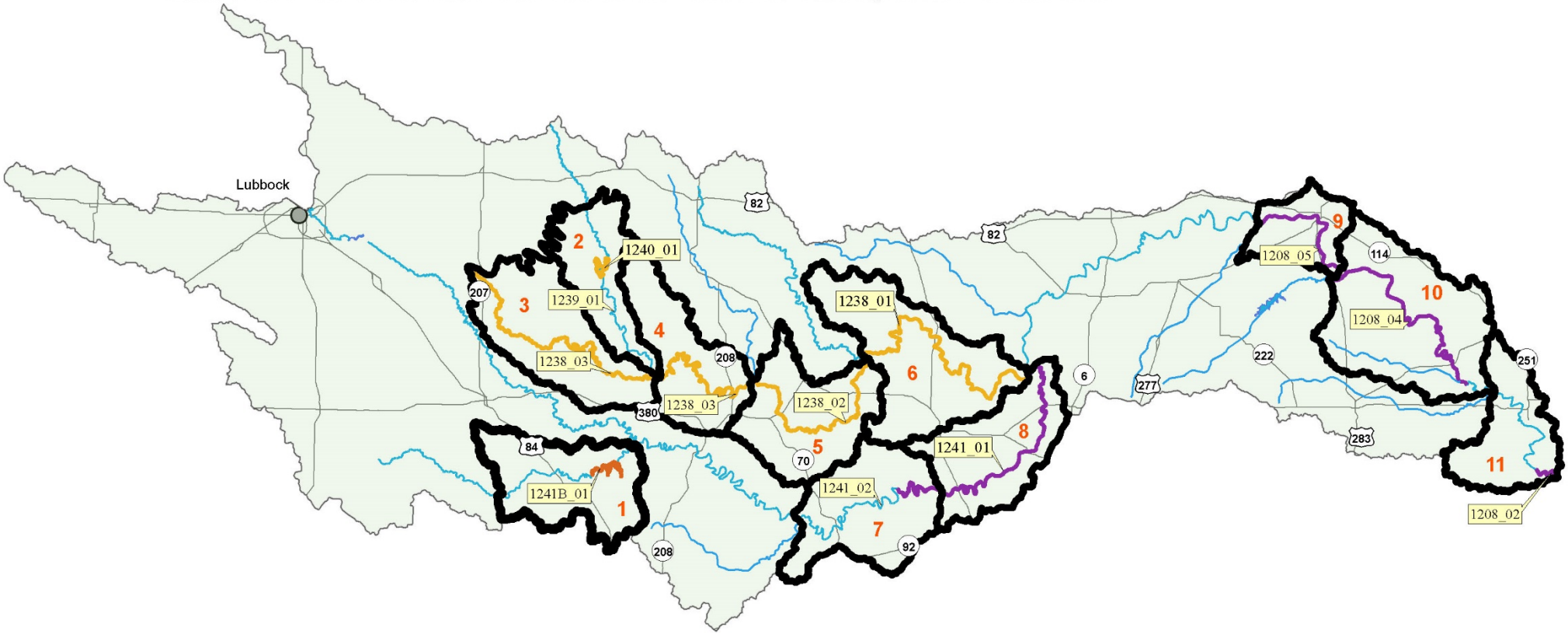
Possible next steps to address any water quality impairment in the watershed are listed here.

At the start of each section is a figure depicting the watershed. There is a map of each of the four major watersheds depicting a generalized view highlighting the smaller HUC10 subwatersheds of interest in the section and each impairment. Then there are more detailed maps of each HUC10 subwatershed showing land use landcover data, base satellite imagery with counties, cities, roads, AUs, monitoring stations, wastewater outfalls, and any impairments or concerns in the watershed based on the 2018 IR.

Salt and Double Mountain Fork Watershed of the Brazos Basin

The Watershed of the Salt and Double Mountain Forks of the Brazos River begins with the formation of the Double Mountain Fork of the Brazos River near Tahoka in Lynn County. The Salt Fork of the Brazos River is formed in southeastern Crosby County and flows approximately 175 miles before joining with the Double Mountain Fork in Stonewall County to form the mainstem of the Brazos River. The Double Mountain Fork and Salt Fork both flow through rural areas with very little development. The land use is primarily agricultural and rangeland. The North Fork of the Double Mountain Fork does have limited perennial flow immediately below the City of Lubbock where several wastewater outfalls create a continuous flow of water. However, this wastewater driven flow typically does not reach the Double Mountain Fork due to high evaporative rates in this arid part of the state. Both the Double Mountain and Salt Forks are shallow streams that meander within the stream bed. This watershed is underlain by geologic formations that are very high in salt content and contribute to the high levels of dissolved solids and chlorides in this watershed and over much of the remaining Brazos River main stem.





Impairments from 2018 IR

- Bacteria Impairment
- Total Dissolved Solids/Chloride Impairment
- Mercury in Edible Tissue
- City

Watersheds of Interest

1- Grape Creek
2 - Lower White River
3 - Headwaters Salt Fork Brazos River
4 - Upper Salt Fork Brazos River
5 - Middle Salt Fork Brazos River
6 - Lower Salt Fork Brazos River
7 - Gyp Creek Double Mountain Fork Brazos River
8 - Tonk Creek
9 - Seymour Creek
10 - Boggy Creek
11 - Fish Creek-Brazos River

0 10 20 Miles

N

Brazos River Authority

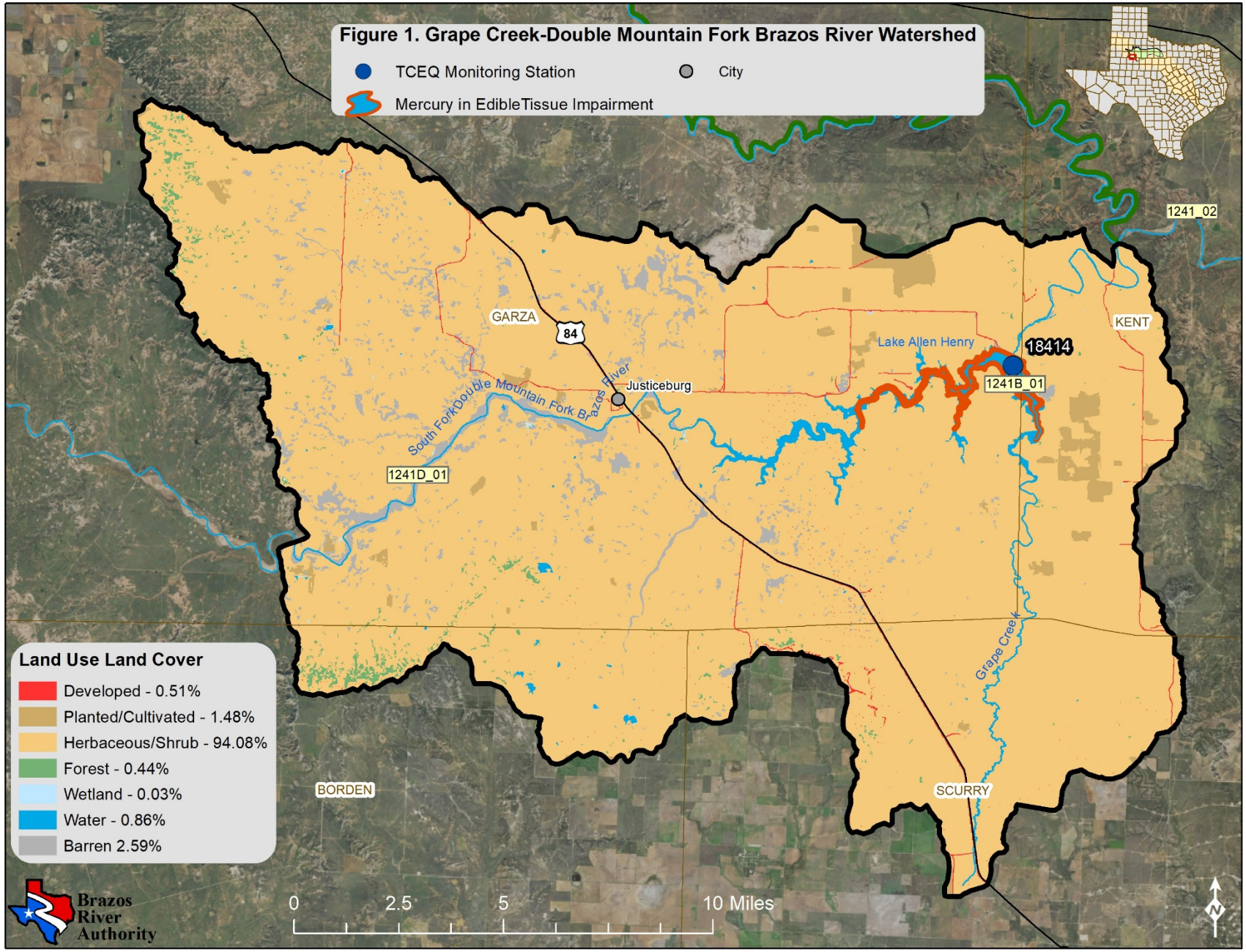


Figure 1. Grape Creek-Double Mountain Fork Brazos River Watershed
TCEQ Monitoring Station
City
Mercury in EdibleTissue Impairment
1241_02
GARZA
84
KENT
Lake Allen Henry
18414
1241B_01
Justiceburg
South ForkDouble Mountain Fork Brazos River
1241D_01
Grape Creek
BORDEN
SCURRY
Land Use Land Cover
Developed - 0.51%
Planted/Cultivated - 1.48%
Herbaceous/Shrub - 94.08%
Forest - 0.44%
Wetland - 0.03%
Water - 0.86%
Barren 2.59%
Brazos River Authority
0
2.5
5
10 Miles
N

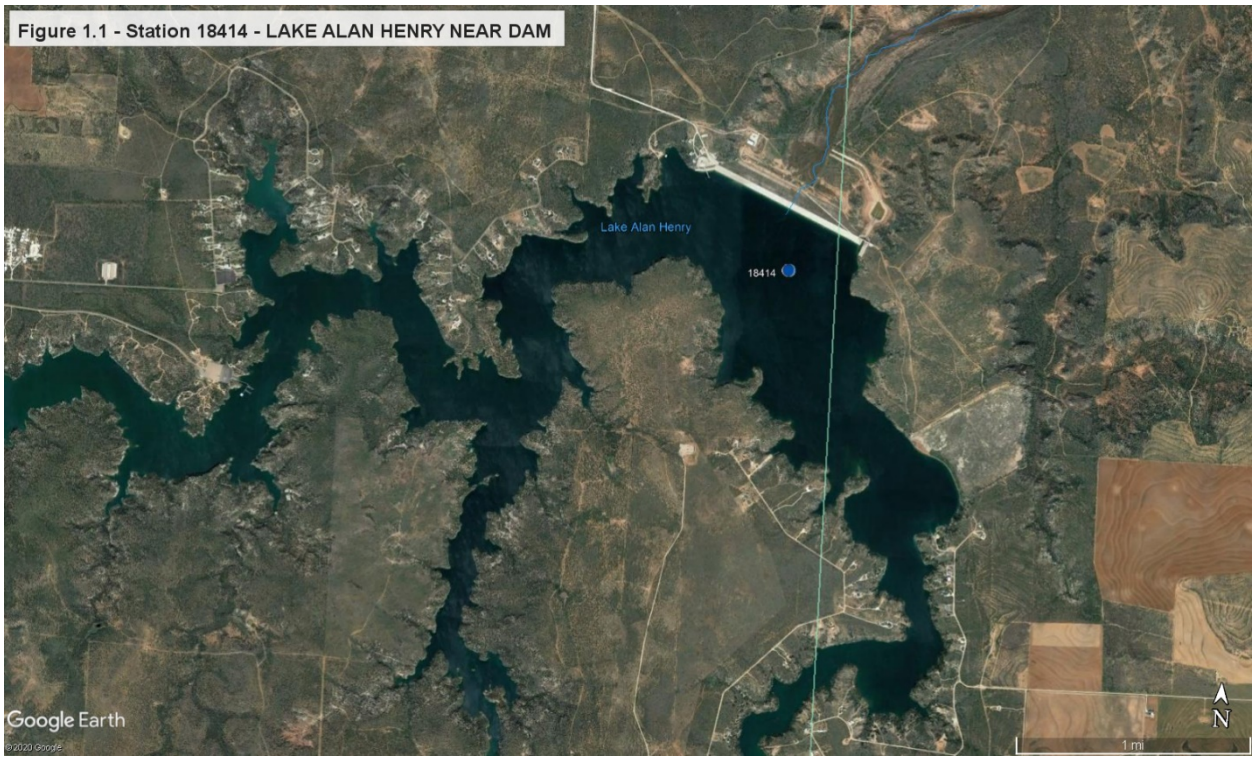
Grape Creek-Double Mountain Fork Brazos River Watershed

Watershed Description:
The Grape Creek-Double Mountain Fork Brazos River Watershed is 275 square miles in area.

Land Use Land Cover in Watershed (Figure 1):
There is one city having a population less than 100 and one reservoir in the Grape Creek-Double Mountain Fork Brazos River Watershed. The dominant land cover in the watershed is herbaceous and shrub vegetation (≈ 94%).

Segments in Watershed (Figure 1):
A portion of 1241D_01: South Fork Double Mountain Fork Brazos River upstream of confluence with North Fork Double Mountain Fork

1241B_01: Lake Alan Henry
Monitoring Station: 18414 - LAKE ALAN HENRY 411 M SOUTH AND 74 M EAST OF DAM CENTERPOINT EAST OF POST TEXAS (Figure 1.1)



Impairments in Watershed Description (Figure 1):
- 1241B_01: Fish consumption use - Mercury in edible tissue

Possible Contributions if Impaired:
Point Sources: There are no wastewater outfalls in the watershed; point sources are unknown.

Non-point sources:

- Wildlife: Herbaceous/shrub and forested areas account for approximately 89% of the watershed which is suitable for wildlife.

Potential non-State Agency Stakeholders:

- City of Justiceberg
- Garza County
- Any marinas or other businesses on or that serve Lake Alan Henry

Actions taken if impaired:

- At the March 19, 2008, TCEQ Commission agenda meeting, the Commissioners directed the Executive Director to convene an open advisory group regarding the State's mercury surface waters impairments. The purpose of this work group was to provide advice to the Commissioners on the best course of action to address the state's surface water bodies that are listed as impaired because of elevated mercury in fish tissue. The group met four times between July 30, 2008 and April 16, 2009. A report summarizing the results of the work group was submitted to the Commission.

Recommendations if Impaired:

- The information gathered and discussed by the Mercury-Impaired Waters Advisory Group and input received from group members indicate that additional coordination and cooperation is needed to determine the most effective way to reduce mercury impairments in Texas. Information obtained from other states also makes it clear that most states are waiting before they pursue any strategies. The report referenced above states that the TCEQ will continue to participate in national air and water programs and initiatives related to mercury and urge EPA to initiate international discussions on mercury control options.

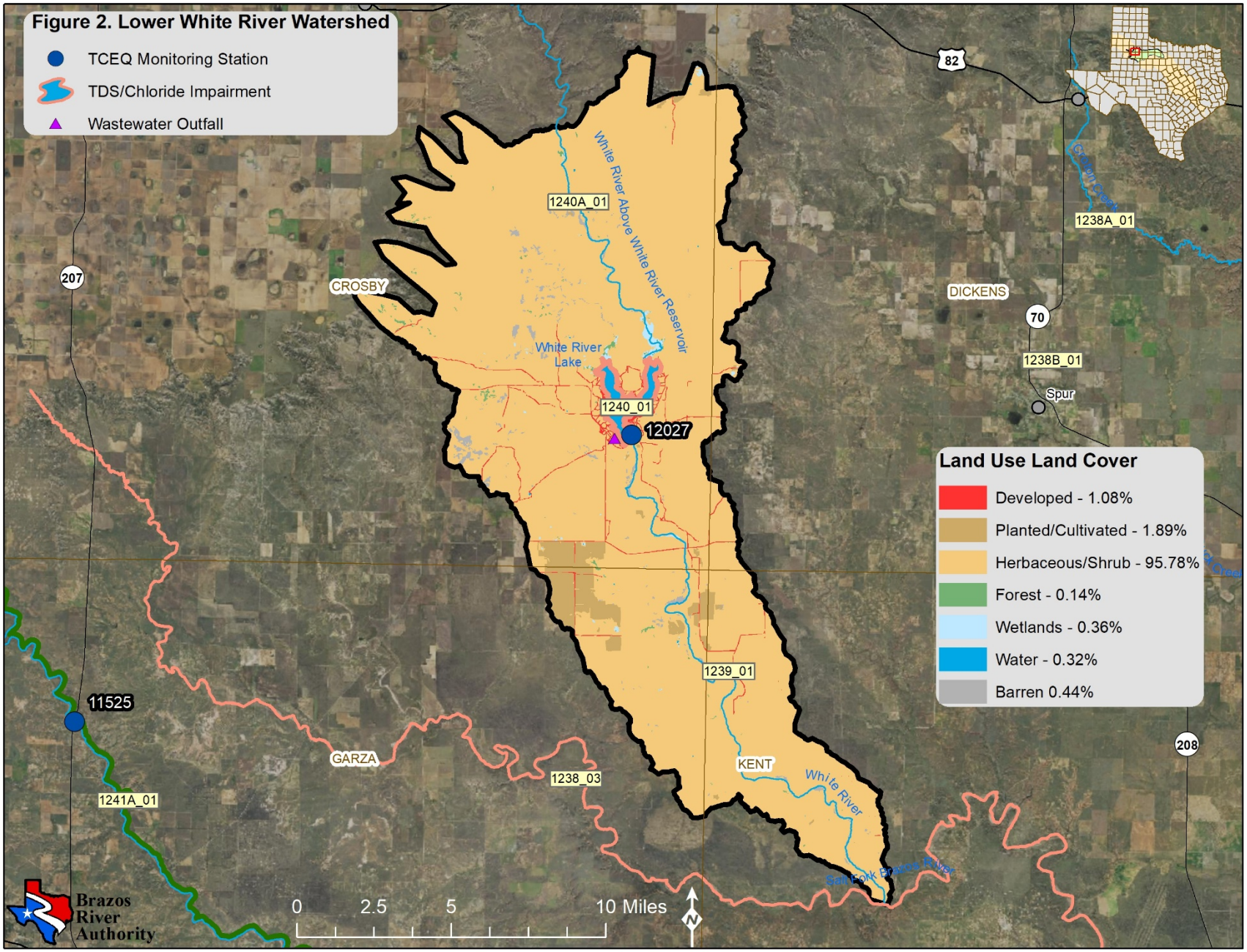


Figure 2. Lower White River Watershed
TCEQ Monitoring Station
TDS/Chloride Impairment
Wastewater Outfall
82
207
70
208
CROSBY
DICKENS
KENT
GARZA
Spur
White River Above White River Reservoir
White River Lake
White River
Salt Fork Brazos River
Croton Creek
1240A_01
1238A_01
1238B_01
1240_01
1239_01
1238_03
1241A_01
12027
11525
Land Use Land Cover
Developed - 1.08%
Planted/Cultivated - 1.89%
Herbaceous/Shrub - 95.78%
Forest - 0.14%
Wetlands - 0.36%
Water - 0.32%
Barren 0.44%
Brazos River Authority
0
2.5
5
10 Miles
N

Lower White River Watershed

Watershed Description:
The Lower White River Watershed is 294 square miles in area.

Land Use Land Cover in Watershed (Figure 2):
There are no cities in the Lower White River Watershed. The dominant land cover in the watershed is herbaceous and shrub vegetation (≈96%). There is one reservoir in the watershed and one wastewater outfall.

Segments in Watershed (Figure 2):
A portion of 1240A_01: Lower 25 miles of the White River above White River Reservoir

1240_01: White River Lake

Monitoring Station: 12027 - WHITE RIVER LAKE AT DAM 146 METERS SOUTH AND 274 METERS WEST OF INTERSECTION OF CROSBY CR 245 AND FM 2794 WEST OF SPUR (Figure 2.1)

1239_01: White River

Impairments in Watershed Description (Figure 2):

- 1240_01: General Use - Chloride and TDS

Possible Contributions if Impaired

Point Sources: There are no known point sources in the watershed.

Non-point sources:

- Natural geology: As with the entire Salt and Double Mountain Fork watershed, the source of the dissolved solids is natural, due to the geology of the watershed.

Potential non-State Agency Stakeholders:

- Crosby County
- Garza County
- Kent County
- Any marinas or other businesses on or that serve White River Lake

Actions taken if impaired:

- A Texas Water Quality Standards (WQS) review for total dissolved solids, chloride and sulfate was completed for segment 1240. TCEQ recommends increased criteria values for these parameters. Environmental Protection Agency (EPA) approval of 2010 WQS is pending.

Recommendations if Impaired:

- Await EPA review and approval of water quality standards before a management strategy is selected.

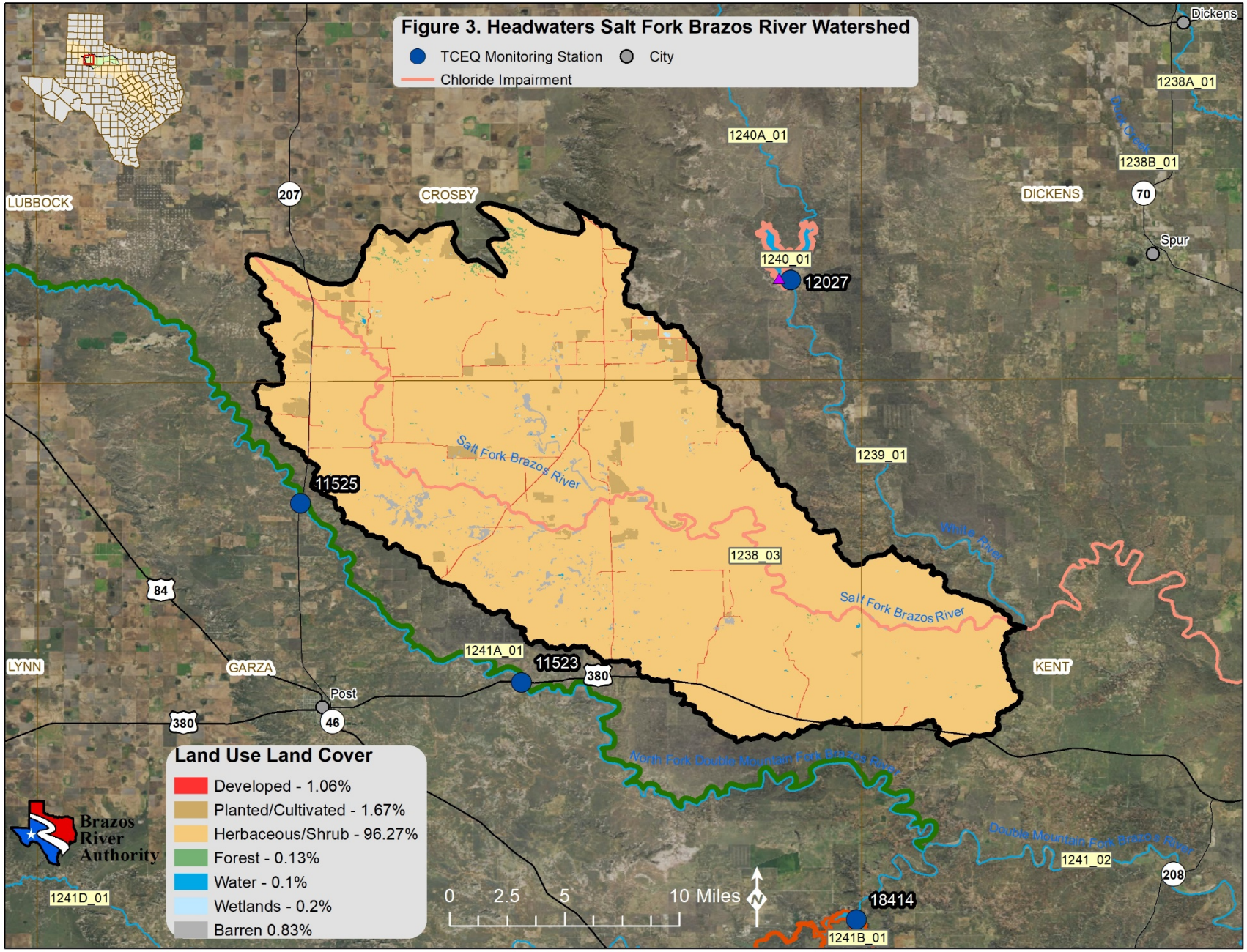


Figure 3. Headwaters Salt Fork Brazos River Watershed
TCEQ Monitoring Station
City
Chloride Impairment
Dickens
1238A_01
1240A_01
1238B_01
LUBBOCK
207
CROSBY
DICKENS
70
Spur
1240_01
12027
Salt Fork Brazos River
1239_01
11525
White River
1238_03
84
Salt Fork Brazos River
1241A_01
11523
380
LYNN
GARZA
Post
KENT
46
380
North Fork Double Mountain Fork Brazos River
Land Use Land Cover
Developed - 1.06%
Planted/Cultivated - 1.67%
Herbaceous/Shrub - 96.27%
Forest - 0.13%
Water - 0.1%
Wetlands - 0.2%
Barren 0.83%
Brazos River Authority
0 2.5 5 10 Miles
N
Double Mountain Fork Brazos River
1241_02
208
18414
1241B_01
1241D_01

Headwaters Salt Fork Brazos River Watershed

Watershed Description:
The Headwaters Salt Fork Brazos River Watershed is 461 square miles in area.

Land Use Land Cover in Watershed (Figure 3):
There are no cities in the Headwaters Salt Fork Brazos River Watershed. The dominant land cover in the watershed is herbaceous and shrub vegetation.

Segments in Watershed (Figure 3):
A portion of 1238_03: Portion of Salt Fork Brazos River from confluence with Butte Creek in Kent County upstream to headwaters in Crosby County (Figure 3.1).

Impairments in Watershed Description (Figure 3):

- 1238_03: General Use – Chloride
  - There is also a concern for bacteria.

Possible Contributions if Impaired:

Point Sources: There are no known point sources in the watershed.

Non-point sources: As with the entire Salt and Double Mountain Fork watershed, the source of the dissolved solids is natural, due to the geology of the watershed.

Potential non-State Agency Stakeholders:

- Garza County

Actions taken if impaired:

- A Texas Water Quality Standards (WQS) review for total dissolved solids, chloride and sulfate was completed for segment 1238. TCEQ recommends increased criteria values for these parameters. Environmental Protection Agency (EPA) approval of 2010 WQS is pending.

Recommendations if Impaired:

- Await EPA review and approval of water quality standards before a management strategy is selected.

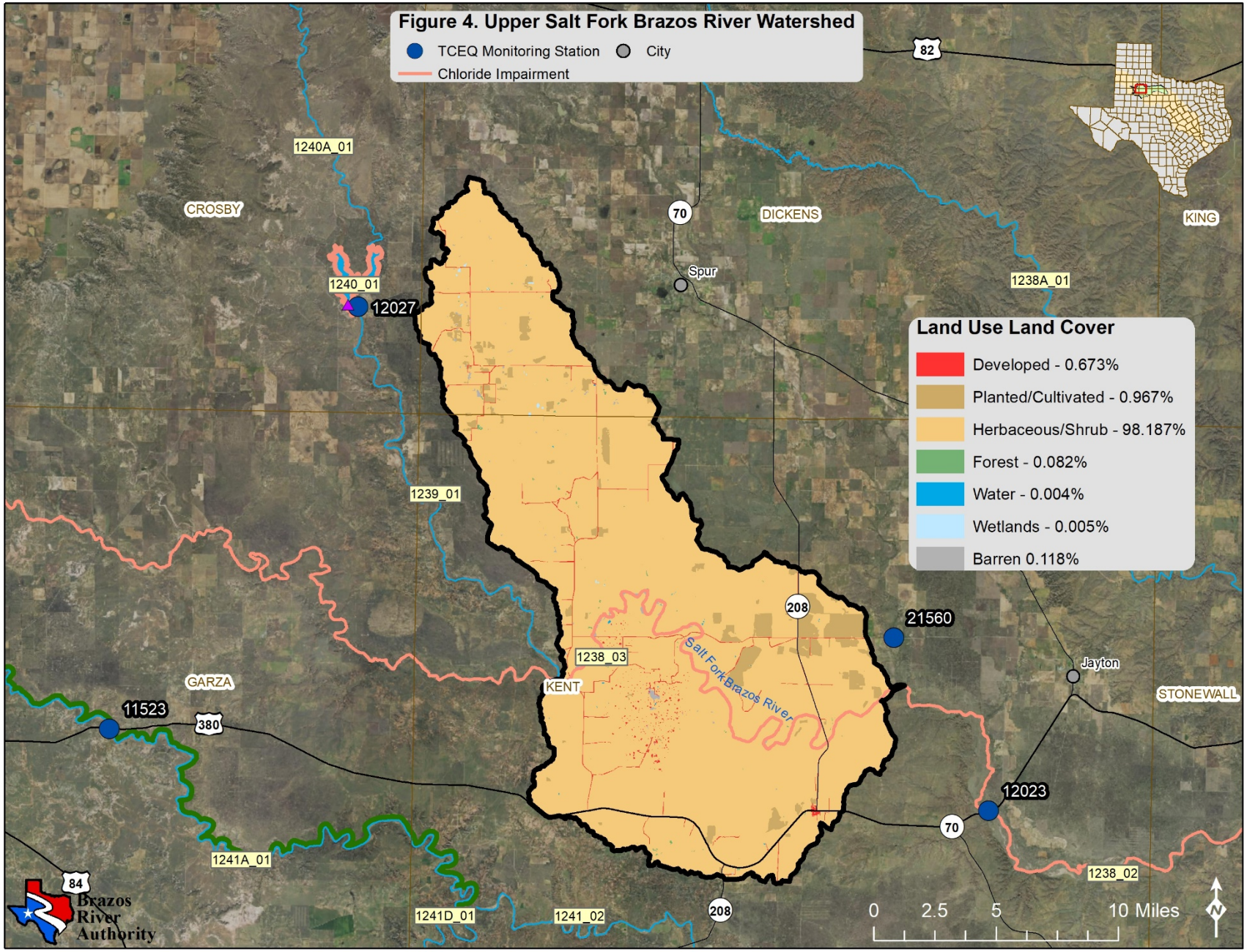


Figure 4. Upper Salt Fork Brazos River Watershed
TCEQ Monitoring Station
City
Chloride Impairment
Land Use Land Cover
Developed - 0.673%
Planted/Cultivated - 0.967%
Herbaceous/Shrub - 98.187%
Forest - 0.082%
Water - 0.004%
Wetlands - 0.005%
Barren 0.118%
1240A_01
1240_01
12027
1239_01
1238A_01
1238_03
1241A_01
1241D_01
1241_02
1238_02
21560
12023
11523
CROSBY
DICKENS
KING
Spur
KENT
GARZA
Jayton
STONEWALL
Salt Fork Brazos River
82
70
208
380
84
0 2.5 5 10 Miles
Brazos River Authority

Upper Salt Fork Brazos River Watershed

Watershed Description:
The Upper Salt Fork Brazos River Watershed is 253 square miles in area.

Land Use Land Cover in Watershed (Figure 4):
There are no cities in the Upper Salt Fork Brazos River Watershed. The dominant land cover in the watershed is herbaceous and shrub vegetation.

Segments in Watershed (Figure 4):
A portion of 1238_03: Portion of Salt Fork Brazos River from confluence with Butte Creek in Kent County upstream to headwaters in Crosby County (Figure 4.1).

Impairments in Watershed Description (Figure 4):

- 1238_03: General Use – Chloride
  - There is also a concern for bacteria.

Possible Contributions if Impaired:

Point Sources: There are no known point sources in the watershed.

Non-point sources: As with the entire Salt and Double Mountain Fork watershed, the source of the dissolved solids is natural, due to the geology of the watershed.

Potential non-State Agency Stakeholders:

- Kent County

Actions taken if impaired:

- A Texas Water Quality Standards (WQS) review for total dissolved solids, chloride and sulfate was completed for segment 1238. TCEQ recommends increased criteria values for these parameters. Environmental Protection Agency (EPA) approval of 2010 WQS is pending.

Recommendations if Impaired:

- Await EPA review and approval of water quality standards before a management strategy is selected.

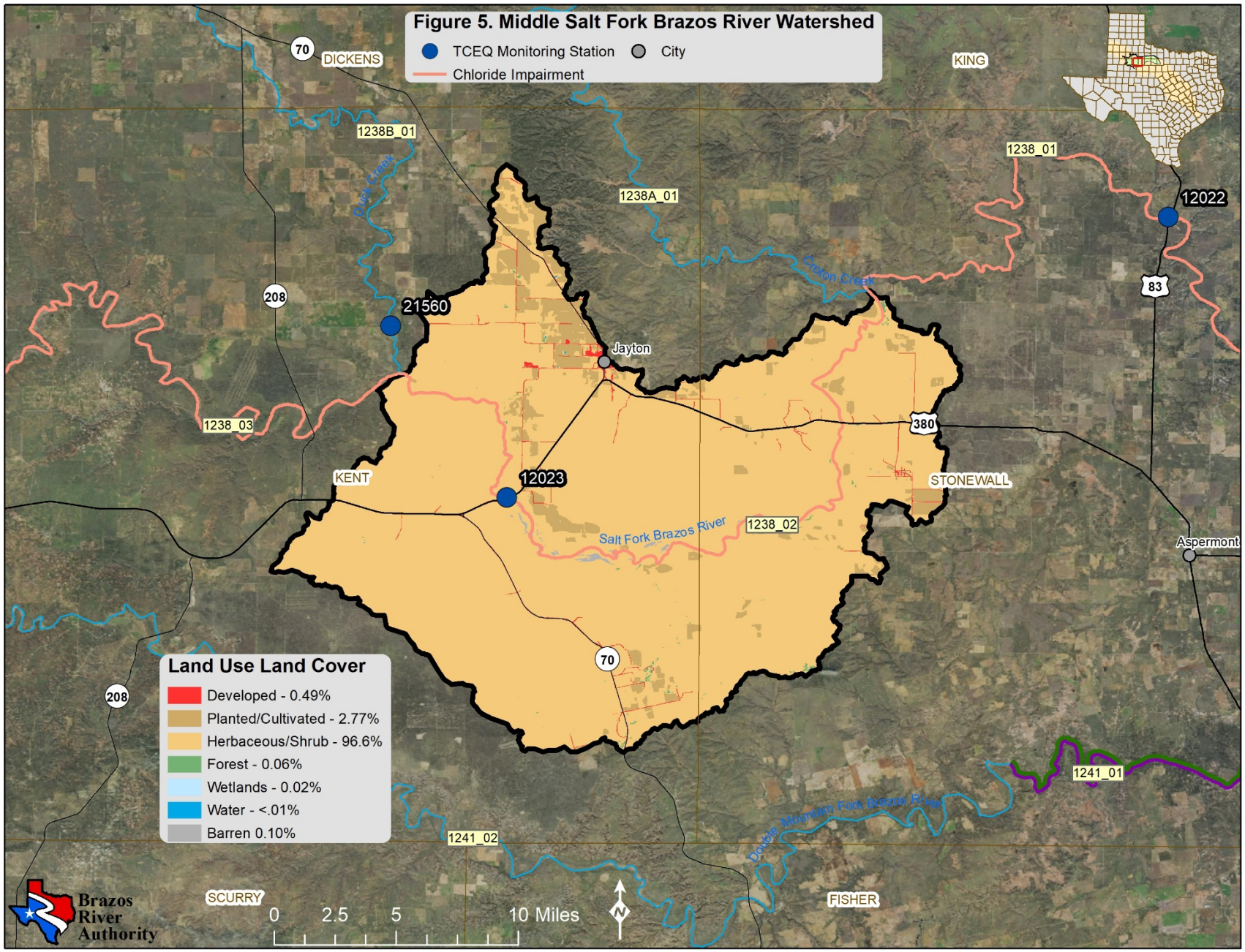


Figure 5. Middle Salt Fork Brazos River Watershed
TCEQ Monitoring Station
City
Chloride Impairment
DICKENS
KING
70
1238B_01
Duck Creek
1238A_01
1238_01
12022
Croton Creek
83
208
21560
Jayton
1238_03
380
KENT
12023
STONEWALL
Salt Fork Brazos River
1238_02
Aspermont
70
208
Land Use Land Cover
Developed - 0.49%
Planted/Cultivated - 2.77%
Herbaceous/Shrub - 96.6%
Forest - 0.06%
Wetlands - 0.02%
Water - <.01%
Barren 0.10%
1241_01
Double Mountain Fork Brazos River
1241_02
SCURRY
FISHER
Brazos River Authority
0 2.5 5 10 Miles
N

Middle Salt Fork Brazos River Watershed

Watershed Description:
The Middle Salt Fork Brazos River Watershed is 290 square miles in area.

Land Use Land Cover in Watershed (Figure 5):
There is one city, Jayton, with an approximate population of 530 in the Middle Salt Fork Brazos River Watershed. The dominant land cover in the watershed is herbaceous and shrub vegetation (≈97%).

Segments in Watershed (Figure 5):
A portion of 1238_03: Portion of Salt Fork Brazos River from confluence with Butte Creek in Kent County upstream to headwaters in Crosby County.

1238_02: Portion of Salt Fork Brazos River from confluence with Croton Creek in Stonewall County upstream to confluence with Butte Creek in Kent County.

Monitoring Station: 12023 - SALT FORK BRAZOS RIVER IMMEDIATELY UPSTREAM OF US 380 EAST OF CLAIREMONT (Figure 5.1)

Impairments in Watershed Description (Figure 5):

- 1238_02: General Use - Chloride

Possible Contributions if Impaired:

Point Sources: There are no known point sources in the watershed.

Non-point sources: As with the entire Salt and Double Mountain Fork watershed, the source of the dissolved solids is natural, due to the geology of the watershed.

Potential non-State Agency Stakeholders:

- City of Jayton
- Kent County
- Stonewall County

Actions taken if impaired:

- A Texas Water Quality Standards (WQS) review for total dissolved solids, chloride and sulfate was completed for segment 1238. TCEQ recommends increased criteria values for these parameters. Environmental Protection Agency (EPA) approval of 2010 WQS is pending.

Recommendations if Impaired:

- Await EPA review and approval of water quality standards before a management strategy is selected.

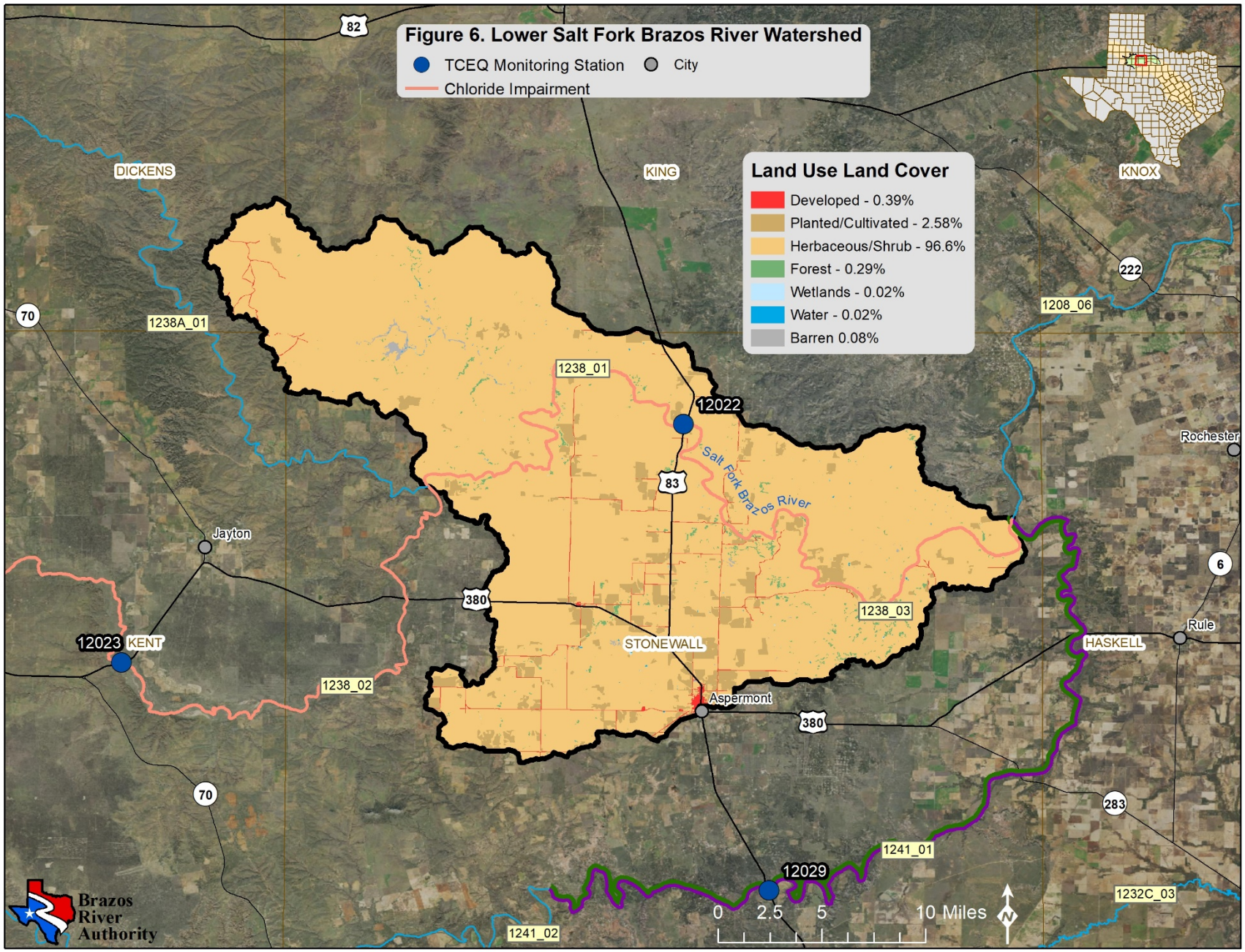


Figure 6. Lower Salt Fork Brazos River Watershed
TCEQ Monitoring Station
City
Chloride Impairment
Land Use Land Cover
Developed - 0.39%
Planted/Cultivated - 2.58%
Herbaceous/Shrub - 96.6%
Forest - 0.29%
Wetlands - 0.02%
Water - 0.02%
Barren 0.08%
DICKENS
KING
KNOX
82
70
222
1238A_01
1208_06
1238_01
12022
Rochester
Salt Fork Brazos River
83
Jayton
6
380
1238_03
12023
KENT
STONEWALL
HASKELL
Rule
1238_02
Aspermont
380
70
283
1241_01
12029
1232C_03
1241_02
Brazos River Authority
0 2.5 5 10 Miles
N

Lower Salt Fork Brazos River Watershed

Watershed Description:
The Lower Salt Fork Brazos River Watershed is 404 square miles in area.

Land Use Land Cover in Watershed (Figure 6):
There is one city, Aspermont, with an estimated population of 840 in the Lower Salt Fork Brazos River Watershed. The dominant land cover in the watershed is herbaceous and shrub vegetation (≈97%).

Segments in Watershed (Figure 6):
A portion of 1238_01: Portion of Salt Fork Brazos River from confluence with Double Mountain Fork Brazos River upstream to confluence with Croton Creek in Stonewall County.

Monitoring Station: 12022 - SALT FORK BRAZOS RIVER 159 METERS UPSTREAM OF US 83 NORTH OF ASPERMONT (Figure 6.1)

1238_03: Portion of Salt Fork Brazos River from confluence with Butte Creek in Kent County upstream to headwaters in Crosby County.

Impairments in Watershed Description (Figure 6):

- 1238_01 and 1238_03: General Use – Chloride
  - There is also a concern for bacteria in these AUs.

Possible Contributions if Impaired:

Point Sources: There are no known point sources in the watershed.

Non-point sources:

- Natural geology: As with the entire Salt and Double Mountain Fork watershed, the source of the dissolved solids is natural, due to the geology of the watershed.

Potential non-State Agency Stakeholders:

- City of Aspermont
- Stonewall County

Actions taken if impaired:

- A Texas Water Quality Standards (WQS) review for total dissolved solids, chloride and sulfate was completed for segment 1238. TCEQ recommends increased criteria values for these parameters. Environmental Protection Agency (EPA) approval of 2010 WQS is pending.

Recommendations if Impaired:

Await EPA review and approval of water quality standards before a management strategy is selected.

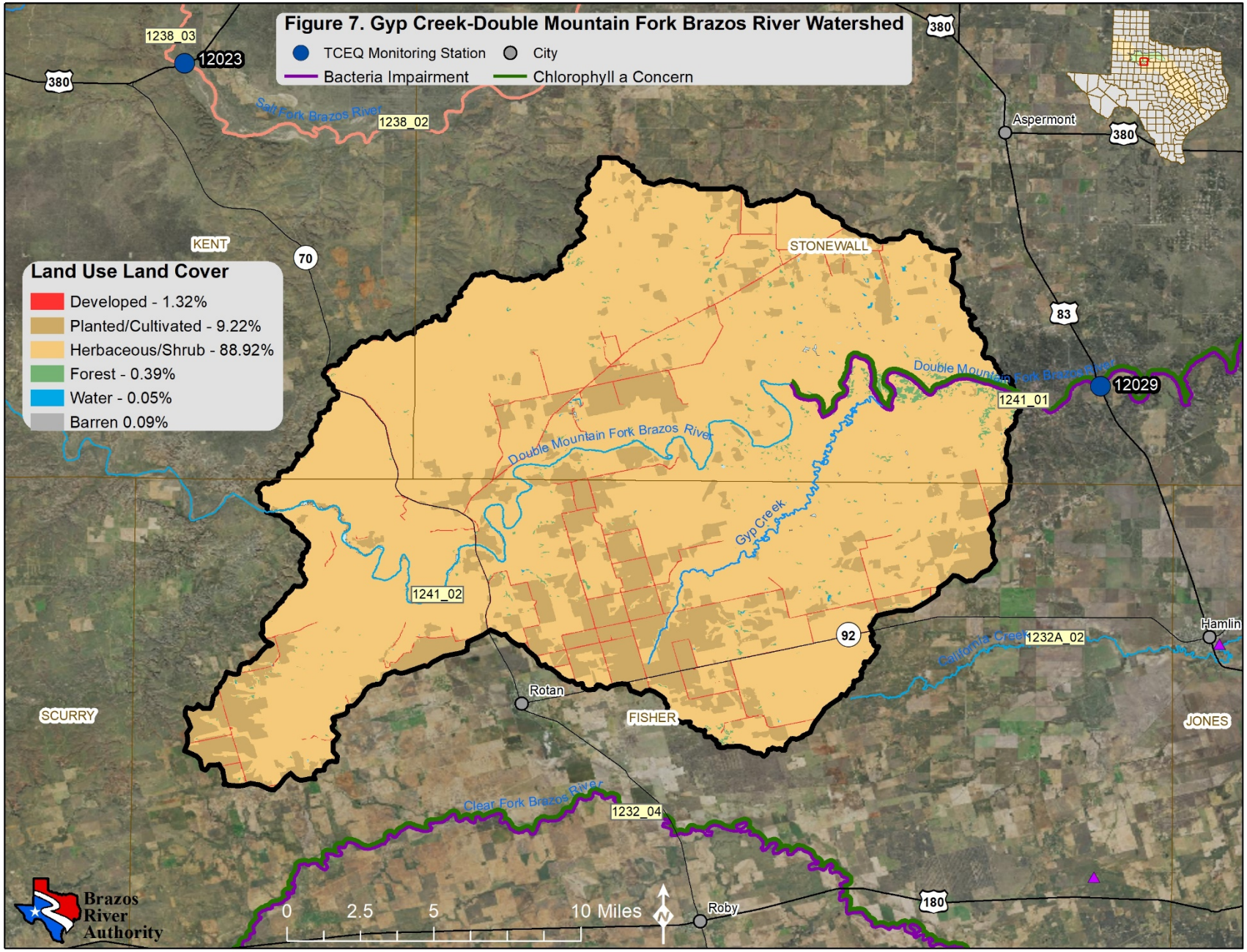


Figure 7. Gyp Creek-Double Mountain Fork Brazos River Watershed
TCEQ Monitoring Station
City
Bacteria Impairment
Chlorophyll a Concern
Land Use Land Cover
Developed - 1.32%
Planted/Cultivated - 9.22%
Herbaceous/Shrub - 88.92%
Forest - 0.39%
Water - 0.05%
Barren 0.09%
1238_03
12023
1238_02
Salt Fork Brazos River
380
Aspermont
KENT
70
STONEWALL
83
Double Mountain Fork Brazos River
12029
1241_01
Double Mountain Fork Brazos River
Gyp Creek
1241_02
92
Hamlin
California Creek
1232A_02
Rotan
FISHER
SCURRY
JONES
Clear Fork Brazos River
1232_04
Roby
180
0
2.5
5
10 Miles
N
Brazos River Authority

Gyp Creek-Double Mountain Fork Brazos River Watershed

Watershed Description:
The Gyp Creek-Double Mountain Fork Brazos River Watershed is 302 square miles in area.

Land Use Land Cover in Watershed (Figure 7):
There are no cities in the Gyp Creek-Double Mountain Fork Brazos River Watershed. The dominant land cover in the watershed is herbaceous and shrub vegetation (≈89%) with some planted/cultivated category areas (≈9%), primarily cotton and winter wheat.

Segments in Watershed (Figure 7):
A portion of 1241_02: Upstream portion of Double Mountain Fork Brazos River, from confluence with Lake Buffalo Springs upstream to confluence with Yellow House Draw

A portion of 1241_01: Double Mountain Fork 25 miles near Hwy 83

Impairments in Watershed Description (Figure 7):
- 1241_01: Recreational Use – Bacteria
  - There are also concerns for chlorophyll-*a.*

Possible Contributions if Impaired:

Point Sources: There are no known point sources in the watershed.

Non-point sources:
- Wildlife: Herbaceous/shrub and forested areas account for approximately 89% of the watershed which is suitable for wildlife. The little forested area in the watershed is adjacent to the upstream portion of 1241_01 in this watershed.

Potential non-State Agency Stakeholders:
- Stonewall County
- Fisher County
- Kent County
- Local farmers and ranchers

Actions taken if impaired:
- A Recreational Use Attainability Analysis (RUAA)has been conducted in segment 1208 and results have led to the recommendations that the segment remain classified as a primary contact recreation (PCR) segment.

Recommendations if Impaired:
- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

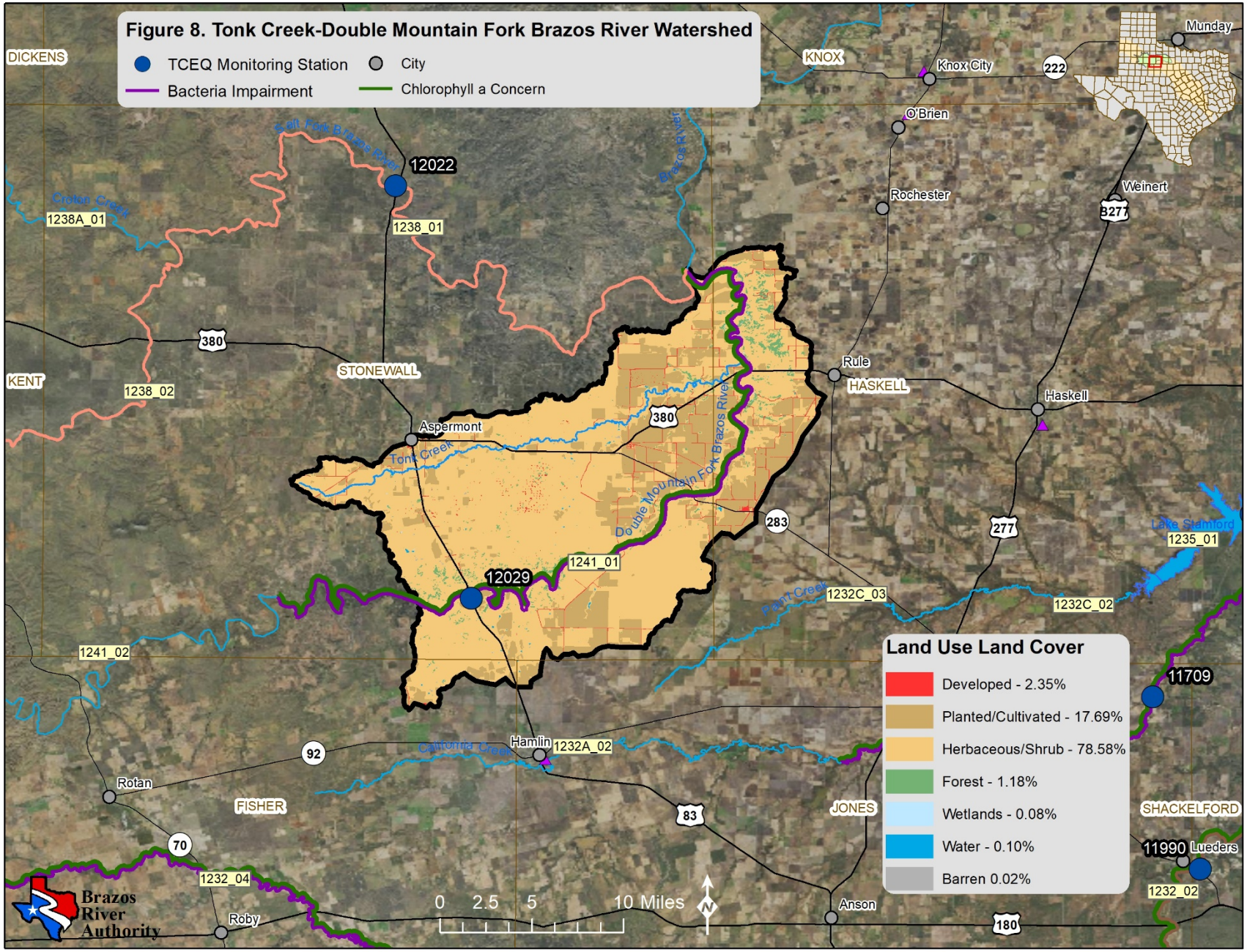


Figure 8. Tonk Creek-Double Mountain Fork Brazos River Watershed
TCEQ Monitoring Station
City
Bacteria Impairment
Chlorophyll a Concern
DICKENS
KNOX
Knox City
Munday
222
O'Brien
Weinert
Rochester
B277
Salt Fork Brazos River
Brazos River
12022
Croton Creek
1238A_01
1238_01
380
KENT
1238_02
STONEWALL
Rule
HASKELL
Haskell
Aspermont
Tonk Creek
Double Mountain Fork Brazos River
283
277
Lake Stamford
1235_01
12029
1241_01
Paint Creek
1232C_03
1232C_02
1241_02
Land Use Land Cover
Developed - 2.35%
Planted/Cultivated - 17.69%
Herbaceous/Shrub - 78.58%
Forest - 1.18%
Wetlands - 0.08%
Water - 0.10%
Barren 0.02%
11709
Hamlin
1232A_02
California Creek
92
Rotan
FISHER
JONES
83
SHACKELFORD
70
11990
Lueders
1232_04
1232_02
Brazos River Authority
Roby
Anson
180
0 2.5 5 10 Miles
N

Tonk Creek-Double Mountain Fork Brazos River Watershed

Watershed Description:
The Tonk Creek-Double Mountain Fork Brazos River Watershed is 285 square miles in area.

Land Use Land Cover in Watershed (Figure 8):
There is one city, Aspermont with an estimated population of 840 in the Tonk Creek-Double Mountain Fork Brazos River Watershed. The dominant land cover in the watershed is herbaceous and shrub vegetation (≈79%) with the planted/cultivated category consisting of primarily winter wheat and cotton being the second most dominant (≈18%) land cover in the watershed.

Segments in Watershed (Figure 8):
1241_01: Double Mountain Fork 25 miles near Hwy 83
Monitoring Station: 12029 - DOUBLE MOUNTAIN FORK BRAZOS RIVER 91 METERS DOWNSTREAM OF US 83 SOUTH OF ASPERMONT (Figure 8.1)

Impairments in Watershed Description (Figure 8):

- 1241_01: Recreational Use – Bacteria
  - There is also a concern for chlorophyll-*a.*

Possible Contributions if Impaired:

Point Sources: There are no known point sources in the watershed.

Non-point sources:

- Wildlife: Herbaceous/shrub and forested areas account for approximately 78% of the watershed which is suitable for wildlife. The little forested area in the watershed is adjacent to the upstream portion of 1241_01 and in close proximity to station 12029.

Potential non-State Agency Stakeholders:

- City of Aspermont
- Stonewall County
- Haskell County
- Local Farmers and Ranchers

Actions taken if impaired:

- A Recreational Use Attainability Analysis (RUAA)has been conducted in segment 1208 and results have led to the recommendations that the segment remain classified as a primary contact recreation (PCR) segment.

Recommendations if Impaired:

- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

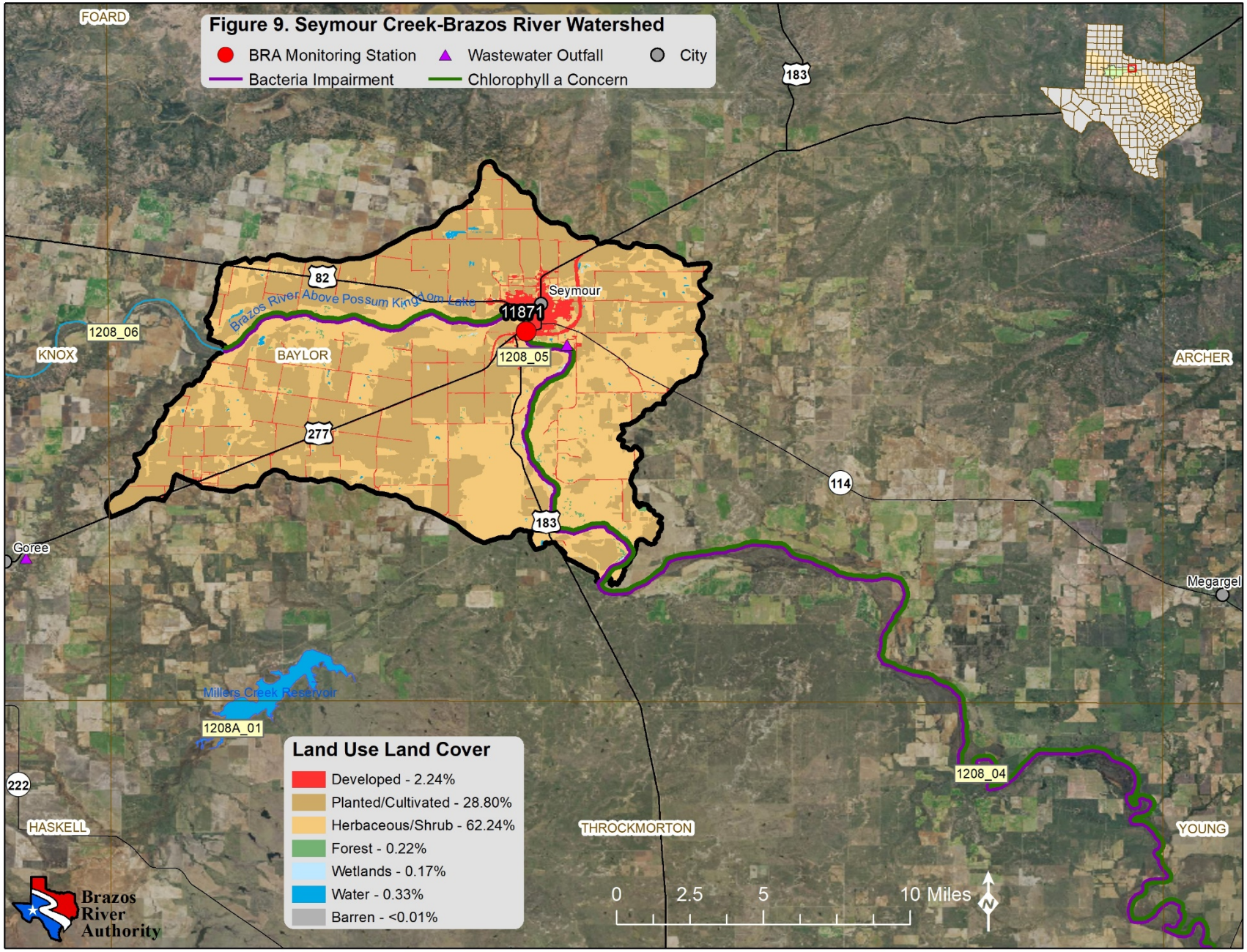


Figure 9. Seymour Creek-Brazos River Watershed
BRA Monitoring Station
Wastewater Outfall
City
Bacteria Impairment
Chlorophyll a Concern
FOARD
183
82
Brazos River Above Possum Kingdom Lake
11871
Seymour
1208_06
KNOX
BAYLOR
1208_05
ARCHER
277
114
183
Goree
Megargel
Millers Creek Reservoir
1208A_01
Land Use Land Cover
Developed - 2.24%
Planted/Cultivated - 28.80%
Herbaceous/Shrub - 62.24%
Forest - 0.22%
Wetlands - 0.17%
Water - 0.33%
Barren - <0.01%
1208_04
222
HASKELL
THROCKMORTON
YOUNG
Brazos River Authority
0
2.5
5
10 Miles
N

Seymour Creek-Brazos River Watershed

Watershed Description:
The Seymour Creek-Brazos River Watershed is 135 square miles in area.

Land Use Land Cover in Watershed (Figure 9):
There is one city, Seymour with an estimated population of 2700, and one wastewater outfall in the Seymour Creek-Brazos River Watershed. The dominant land cover in the watershed is herbaceous/shrub land (≈62%) followed by the planted/cultivated category (≈29%). The planted/cultivated category is primarily planted with winter wheat with smaller areas of cotton and sorghum.

Segments in Watershed (Figure 9):

- 1208_05: Brazos River Above Possum Kingdom Lake from confluence with Millers Creek upstream to confluence with Lake Creek
  Monitoring Station: 11871 - BRAZOS RIVER AT US 183/US 277 AT SEYMOUR (Figure 9.1)

Figure 9.1 – Station 11871 - BRAZOS RIVER AT US 183/US 277

Impairments in Watershed Description (Figure 9):

- 1208_05: Recreational Use – Bacteria
  - There is also a concern for chlorophyll-*a.*

Possible Contributions if Impaired:

Point Sources:

- There is one city and one wastewater outfall in the watershed.

Non-point sources:

- Wildlife - Over 60% of the watershed is covered by herbaceous and shrub vegetation therefore there may be a significant amount of wildlife activity.

- Agricultural runoff - There is also approximately 29% of the watershed being planted and cultivated.

Potential non-State Agency Stakeholders:

- City of Seymour
- Baylor County

Actions taken if impaired:

- An RUAA has been conducted in segment 1208 and results have led to the recommendation is that the segment remain classified as a PCR segment.

Recommendations if Impaired:

- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

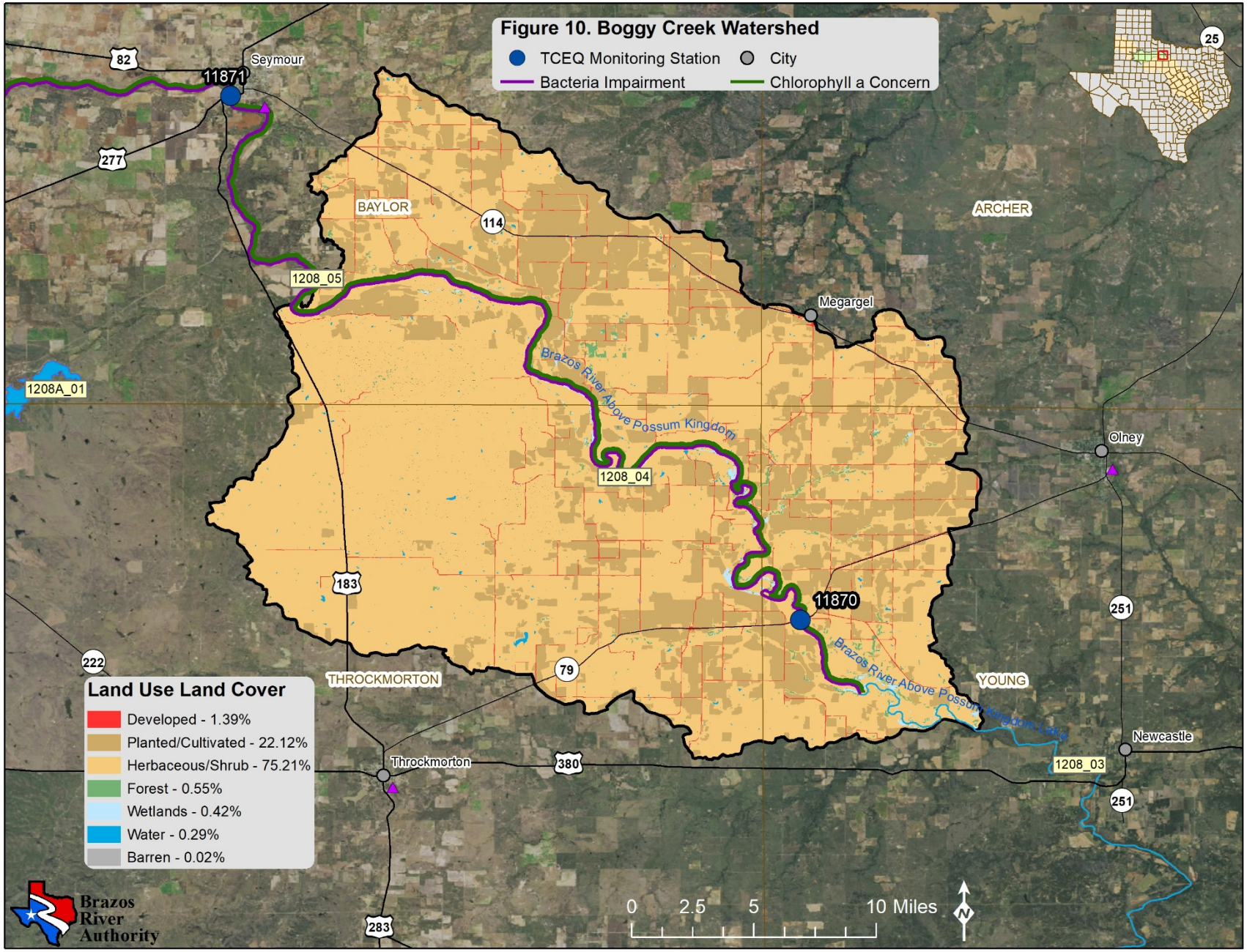


Figure 10. Boggy Creek Watershed
TCEQ Monitoring Station
City
Bacteria Impairment
Chlorophyll a Concern
11871
Seymour
82
277
BAYLOR
114
ARCHER
1208_05
Megargel
1208A_01
Brazos River Above Possum Kingdom
1208_04
Olney
11870
183
251
222
79
THROCKMORTON
YOUNG
Brazos River Above Possum Kingdom Lake
Newcastle
Throckmorton
380
1208_03
251
283
Land Use Land Cover
Developed - 1.39%
Planted/Cultivated - 22.12%
Herbaceous/Shrub - 75.21%
Forest - 0.55%
Wetlands - 0.42%
Water - 0.29%
Barren - 0.02%
Brazos River Authority
0 2.5 5 10 Miles
N
25

Boggy Creek-Brazos River Watershed

Watershed Description:
The Boggy Creek-Brazos River Watershed is 458 square miles in area.

Land Use Land Cover in Watershed (Figure 10):
There are no cities in the Boggy Creek-Brazos River Watershed. The dominant land cover in the watershed is herbaceous/scrub (≈75%) land followed by the planted/cultivated category (≈22%). The planted/cultivated category is primarily planted with winter wheat with smaller areas of cotton and sorghum.

Segments in Watershed (Figure 10):
The upstream portion of 1208_03: Brazos River Above Possum Kingdom Lake from confluence with Fish Creek upstream to confluence with Boggy Creek

1208_04: Brazos River Above Possum Kingdom Lake from confluence with Boggy Creek upstream to confluence with Millers Creek

Monitoring Station: 11870 - BRAZOS RIVER 71 METERS DOWNSTREAM OF SH 79 NORTHEAST OF THROCKMORTON (Figure 10.1)

Impairments in Watershed Description (Figure 10):

- 1208_04: Recreational Use – Bacteria
  - There is also a concern for chlorophyll-*a.*

Possible Contributions if Impaired:

Point Sources:

- No known point sources in watershed

Non-point sources:

- Wildlife: Approximately 75% of the watershed is covered by herbaceous and shrub vegetation therefore there may be a significant amount of wildlife activity.

Potential non-State Agency Stakeholders:

- Baylor County
- Throckmorton County
- Young County

Actions taken if impaired:

- A Recreational Use Attainability Analysis (RUAA)has been conducted in segment 1208 and results have led to the recommendations that the segment remain classified as a primary contact recreation (PCR) segment.

Recommendations if Impaired:

- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

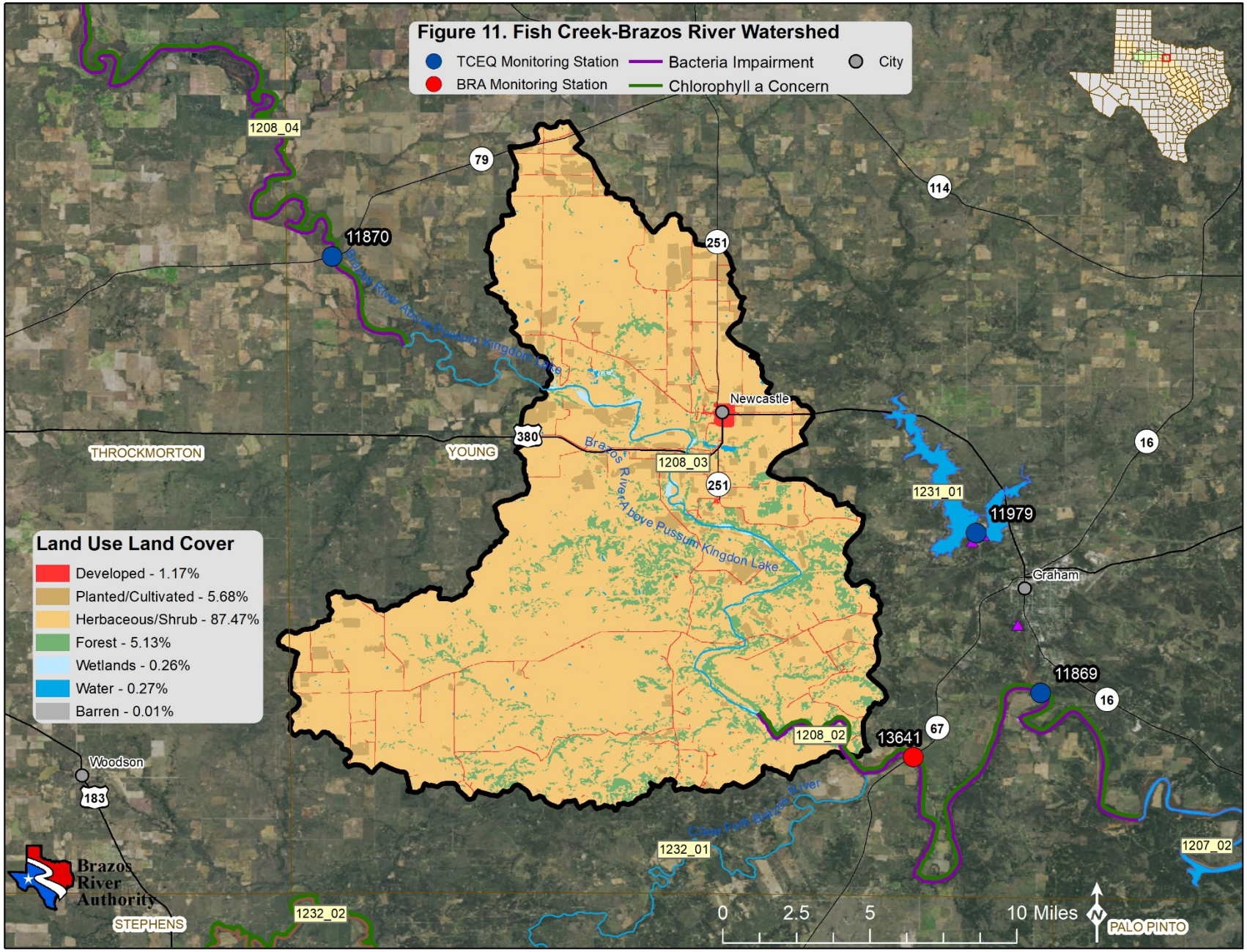


Figure 11. Fish Creek-Brazos River Watershed
TCEQ Monitoring Station
BRA Monitoring Station
Bacteria Impairment
Chlorophyll a Concern
City
Land Use Land Cover
Developed - 1.17%
Planted/Cultivated - 5.68%
Herbaceous/Shrub - 87.47%
Forest - 5.13%
Wetlands - 0.26%
Water - 0.27%
Barren - 0.01%
1208_04
11870
1208_03
1208_02
13641
1231_01
11979
11869
1232_01
1232_02
1207_02
Newcastle
Graham
Woodson
THROCKMORTON
YOUNG
STEPHENS
PALO PINTO
Brazos River Above Possum Kingdom Lake
Clear Fork Brazos River
79
114
251
380
16
67
183
Brazos River Authority
0 2.5 5 10 Miles

Fish Creek-Brazos River Watershed

Watershed Description:
The Fish Creek-Brazos River Watershed is 213 square miles in area.

Land Use Land Cover in Watershed (Figure 11):
There is one city, Newcastle with an estimated population of 570 in the Fish Creek-Brazos River Watershed. The dominant land cover in the watershed is herbaceous/scrub land (≈87%). Of the impaired subwatersheds in the Salt and Double Mountain Fork Watershed, this is the most forested (≈5%).

Segments in Watershed (Figure 11):
The downstream portion of 1208_03: Brazos River Above Possum Kingdom Lake from confluence with Fish Creek upstream to confluence with Boggy Creek (Figure 11.1)

Figure 11.1 - Brazos River above Possum Kingdom at US Hwy 380, Young Co.

Upstream portion of 1208_02: Brazos River Above Possum Kingdom Lake - portion of segment from confluence with Spring Branch upstream to confluence with Fish Creek

Impairments in Watershed Description (Figure 11):

- 1208_02: Recreational Use – Bacteria
    - There is also a concern for chlorophyll-*a.*

Possible Contributions if Impaired:

Point Sources:

- No known point source contributions.

Non-point sources:

- Wildlife – Over 87% of the watershed is covered by herbaceous and shrub vegetation with the most forested area of the subwatersheds in the Salt and Double Mountain Fork Watershed, therefore there may be a significant amount of wildlife activity.

Potential non-State Agency Stakeholders:

- City of Newcastle
- Young County

Actions taken if impaired:

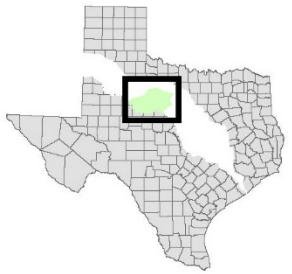
- An RUAA has been conducted in segment 1208 and results have led to the recommendation is that the segment remain classified as a PCR segment.

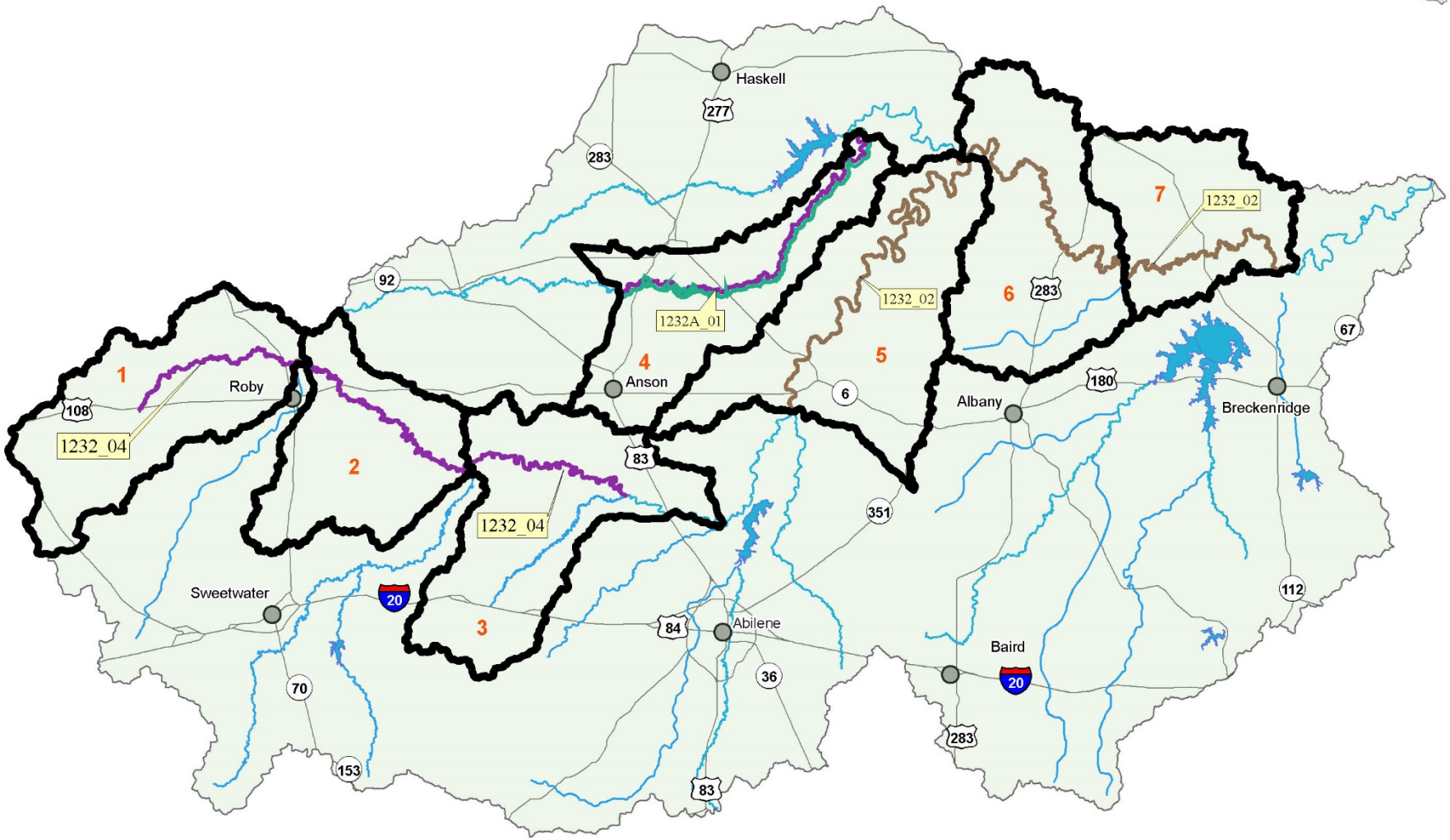
Recommendations if Impaired:

- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

Clear Fork Watershed of the Brazos River Basin

The Clear Fork Watershed begins in Fisher County and flows 284 miles east through Jones, Shackelford, Throckmorton, Stephens, and Young Counties, to its mouth on the Brazos River near South Bend in southern Young County. The predominant land use is agricultural with one major urban area, Abilene.





Impairments from 2018 IR

- Bacteria Impairment
- pH Impairment
- Fish Community Impairment
- City

Watersheds of Interest

1 - Headwaters Clear Fork Brazos River
2 - Plum Creek
3 - Noodle Creek
4 - Lower California Creek
5 - Chimney Creek
6 - Foyle Creek
7 - Kings Creek

Brazos River Authority

0 10 20 Miles

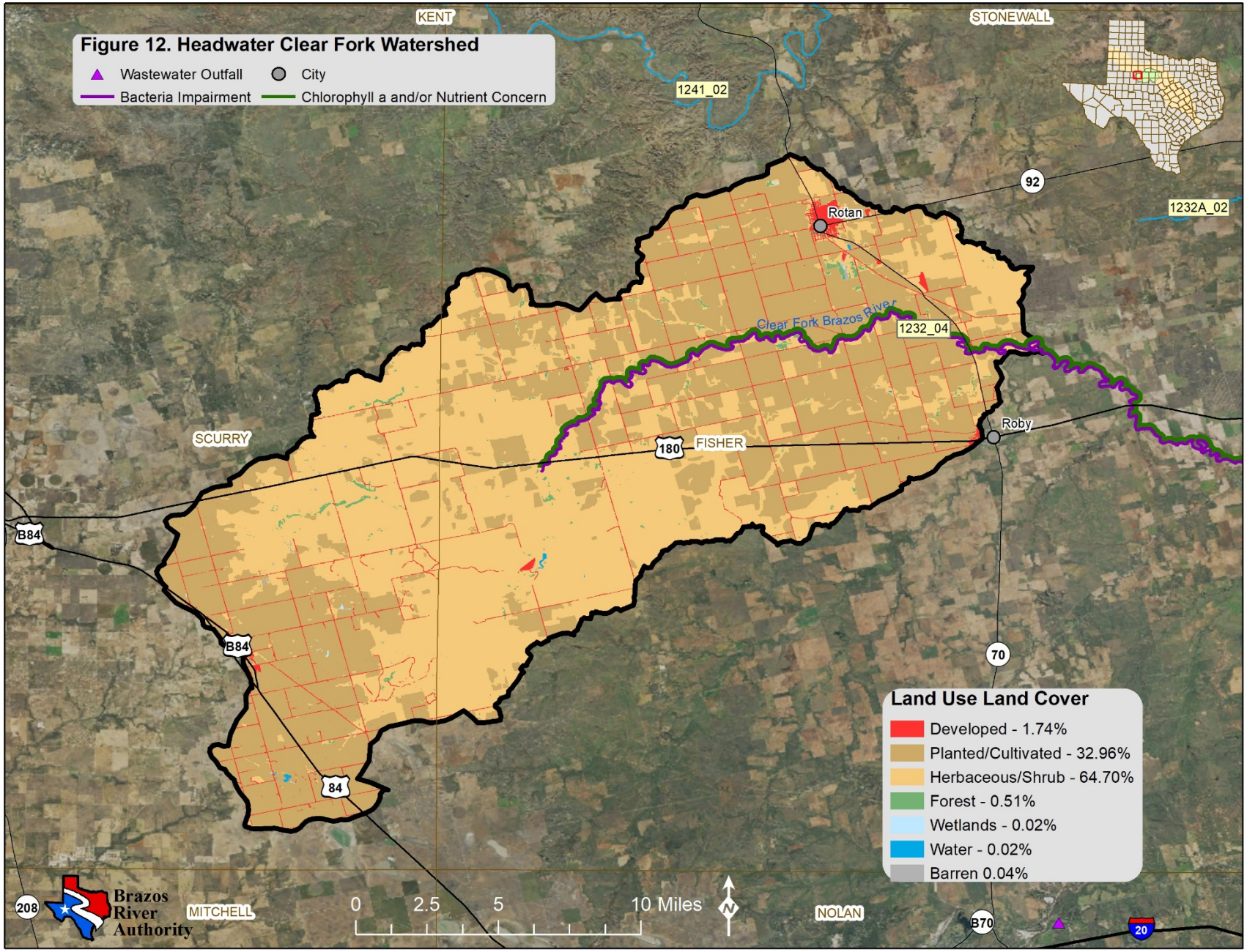


Figure 12. Headwater Clear Fork Watershed
Wastewater Outfall
City
Bacteria Impairment
Chlorophyll a and/or Nutrient Concern
KENT
STONEWALL
1241_02
92
1232A_02
Rotan
Clear Fork Brazos River
1232_04
Roby
SCURRY
180
FISHER
B84
B84
84
70
208
MITCHELL
NOLAN
B70
20
Brazos River Authority
0 2.5 5 10 Miles
N
Land Use Land Cover
Developed - 1.74%
Planted/Cultivated - 32.96%
Herbaceous/Shrub - 64.70%
Forest - 0.51%
Wetlands - 0.02%
Water - 0.02%
Barren 0.04%

Headwaters Clear Fork Brazos River Watershed

Watershed Description:
The Headwaters Clear Fork Brazos River Watershed is 308 square miles in area.

Land Use Land Cover in Watershed (Figure 12):
There is one city, Rotan with an estimated population of 1500, and one wastewater outfall in the Headwaters Clear Fork Brazos River Watershed. The dominant land cover in the watershed is herbaceous/shrub land (65%) followed by the planted/cultivated category (33%). Cotton is the dominant crop in the planted/cultivated category.

Segments in Watershed (Figure 12):

- Upstream portion of 1232_04: Clear Fork Brazos River from confluence with Bitter Creek upstream to end of segment

Impairments in Watershed Description (Figure 12):

- 1232_04: Recreational Use – Bacteria
    - There is also a concern for chlorophyll-*a* and Nitrate.

Possible Contributions if Impaired:

Point Sources: No known point source contributions.

Non-point sources:

- Wildlife – Approximately 65% of the watershed is covered by herbaceous and shrub vegetation with therefore there may be a significant amount of wildlife activity.

Agricultural runoff - There is also approximately 33% of the watershed being planted and cultivated with a significant portion adjacent to 1232_04.

Potential non-State Agency Stakeholders:

- City of Rotan
- Scurry County
- Fisher County
- South Central Water Company

Actions taken if impaired:

- No action taken at this time.

Recommendations if Impaired:

- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

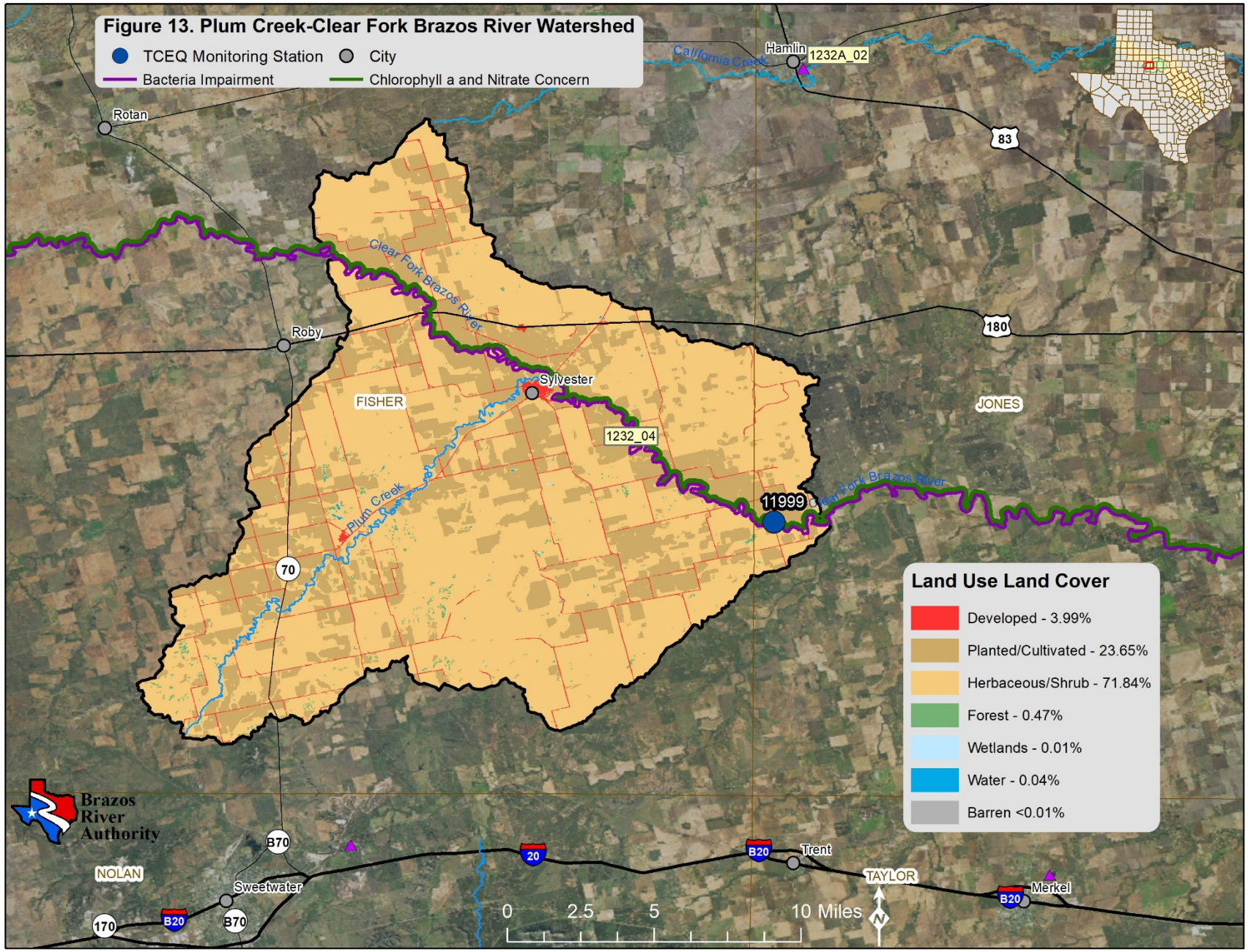


Figure 13. Plum Creek-Clear Fork Brazos River Watershed
TCEQ Monitoring Station
City
Bacteria Impairment
Chlorophyll a and Nitrate Concern
Rotan
Hamlin
1232A_02
California Creek
83
Clear Fork Brazos River
Roby
180
Sylvester
FISHER
JONES
1232_04
Plum Creek
11999
Clear Fork Brazos River
70
Land Use Land Cover
Developed - 3.99%
Planted/Cultivated - 23.65%
Herbaceous/Shrub - 71.84%
Forest - 0.47%
Wetlands - 0.01%
Water - 0.04%
Barren <0.01%
Brazos River Authority
B70
20
B20
Trent
TAYLOR
Merkel
NOLAN
Sweetwater
170
0
2.5
5
10 Miles
N

Plum Creek-Clear Fork Brazos River Watershed

Watershed Description:
The Plum Creek-Clear Fork Brazos River Watershed is 225 square miles in area.

Land Use Land Cover in Watershed (Figure 13):
There one city, Sylvester with an estimated population of less than 100, in the Plum Creek-Clear Fork Brazos River Watershed. The dominant land cover in the watershed is herbaceous/shrub land (72%) followed by the planted/cultivated category (24%). The planted/cultivated category consists of a mix of cotton and winter wheat with scattered sorghum as well.

Segments in Watershed (Figure 13):
Portion of 1232_04: Clear Fork Brazos River from confluence with Bitter Creek upstream to end of segment

Monitoring Station: 11999 - CLEAR FORK BRAZOS RIVER IMMEDIATELY DOWNSTREAM OF FM 1812 NORTHWEST OF NOODLE (Figure 13.1)

Impairments in Watershed Description (Figure 13):

- 1232_04: Recreational Use – Bacteria
    - There is also a concern for chlorophyll-*a* and Nitrate.

Possible Contributions if Impaired:

Point Sources: No known point source contributions.

Non-point sources:

- Wildlife - Over 70% of the watershed is covered by herbaceous and shrub vegetation with therefore there may be a significant amount of wildlife activity.

- Agricultural runoff - There is also approximately 24% of the watershed being planted and cultivated with a significant portion adjacent to 1232_04.

Potential non-State Agency Stakeholders:

- City of Sylvester
- City of Longworth
- City of Royston
- Fisher County

Actions taken if impaired:

- No action taken at this time.

Recommendations if Impaired:

- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

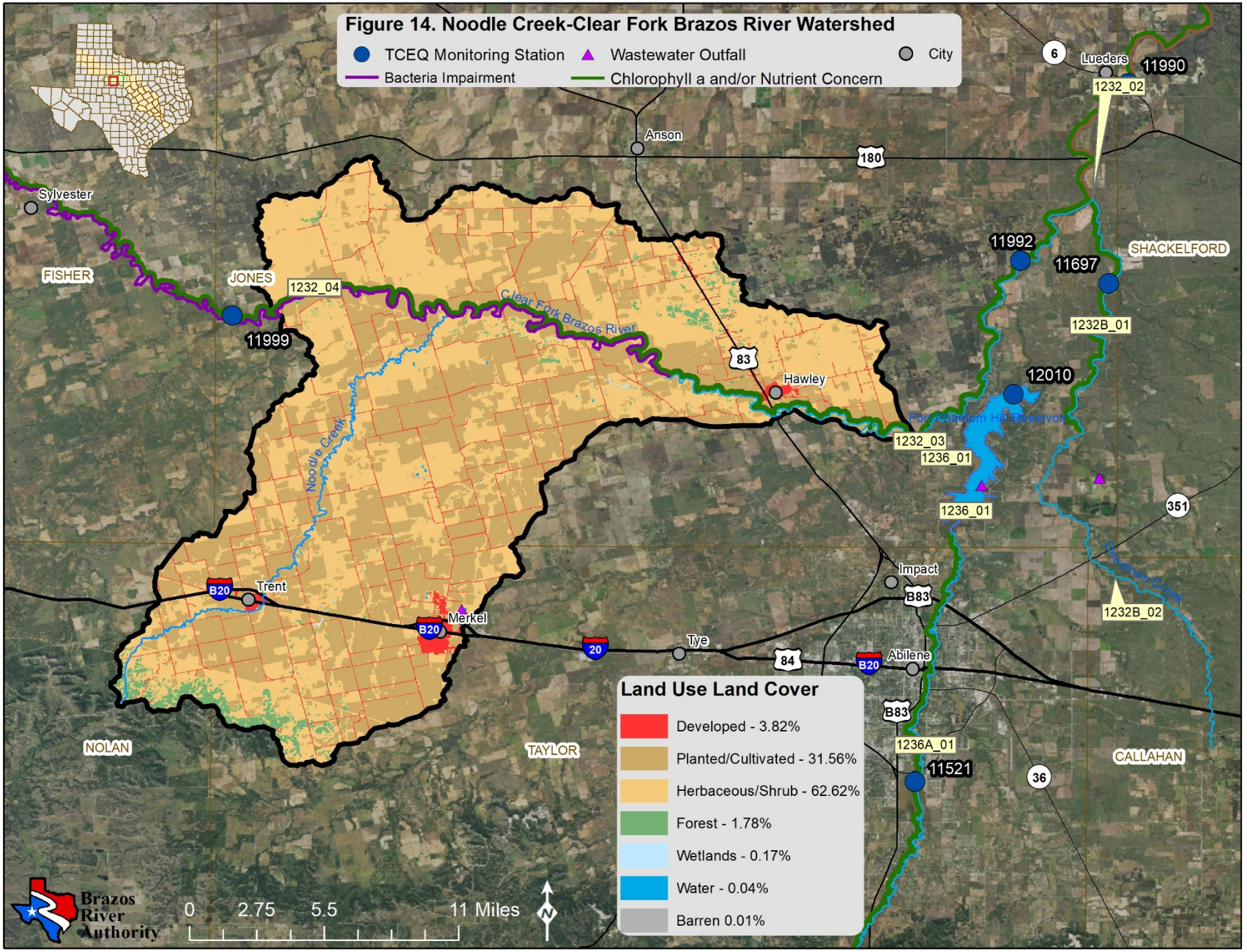


Figure 14. Noodle Creek-Clear Fork Brazos River Watershed
TCEQ Monitoring Station
Wastewater Outfall
City
Bacteria Impairment
Chlorophyll a and/or Nutrient Concern
Land Use Land Cover
Developed - 3.82%
Planted/Cultivated - 31.56%
Herbaceous/Shrub - 62.62%
Forest - 1.78%
Wetlands - 0.17%
Water - 0.04%
Barren 0.01%
Brazos River Authority
0
2.75
5.5
11 Miles
Anson
Sylvester
FISHER
JONES
NOLAN
TAYLOR
CALLAHAN
SHACKELFORD
Lueders
Hawley
Trent
Merkel
Tye
Impact
Abilene
Clear Fork Brazos River
Noodle Creek
Deadman Creek
11990
1232_02
11992
11697
1232B_01
11999
1232_04
12010
1232_03
1236_01
1232B_02
1236A_01
11521
180
83
20
84
B20
B83
351
36
6

Noodle Creek-Clear Fork Brazos River Watershed

Watershed Description:
The Noodle Creek-Clear Fork Brazos River Watershed is 305 square miles in area.

Land Use Land Cover in Watershed (Figure 14):
There are three cities, Trent, Hawley and Merkel with estimated populations of 340, 620 and 2600 respectively and there is one wastewater outfall in the Noodle Creek-Clear Fork Brazos River Watershed. The dominant land cover in the watershed is herbaceous/shrub land (≈63%) followed by the planted/cultivated category (≈32%). The planted/cultivated category consists of a mix of cotton and winter wheat with scattered sorghum as well.

Segments in Watershed (Figure 14):
Portion of 1232_04: Clear Fork Brazos River from confluence with Bitter Creek upstream to end of segment (Figure 14.1)

Portion of 1232_03: Clear Fork Brazos River from confluence with Deadman Creek upstream to confluence with Bitter Creek

Impairments in Watershed Description (Figure 14):

- 1232_04: Recreational Use – Bacteria
    - There is a concern for chlorophyll-*a* and Nitrate.
- There are also concerns for chlorophyll-*a* and depressed dissolved oxygen in 1232_03.

Possible Contributions if Impaired:

Point Sources: No known point source contributions.

Non-point sources:

- Wildlife - Over 60% of the watershed is covered by herbaceous and shrub vegetation with therefore there may be a significant amount of wildlife activity.
- Agricultural runoff - There is also approximately 32% of the watershed being planted and cultivated with a significant portion adjacent to 1232_04.

Potential non-State Agency Stakeholders:

- City of Hawley
- City of Trent
- City of Merkel
- Jones County
- Taylor County

Actions taken if impaired:

- No action taken at this time.

Recommendations if Impaired:

- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

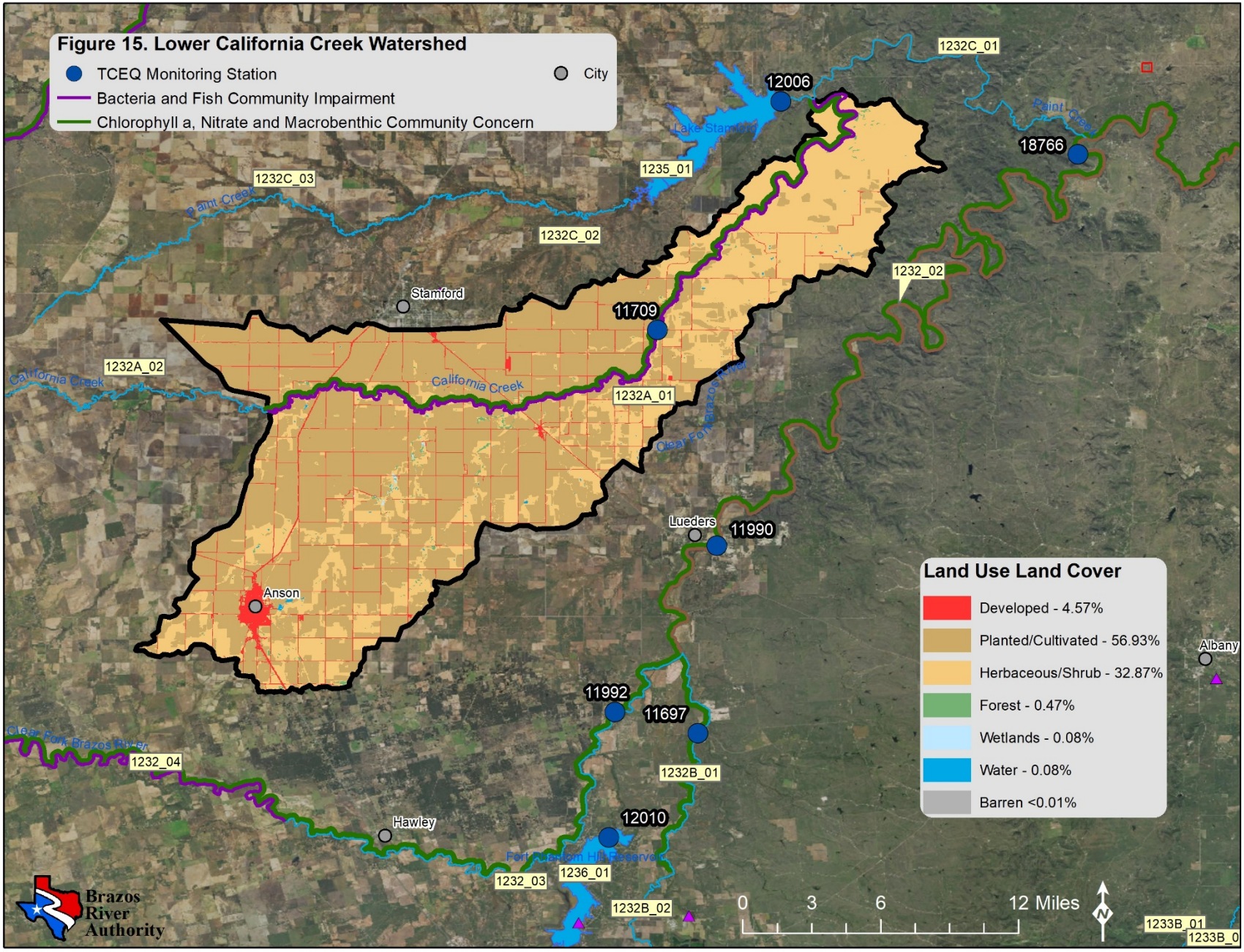


Figure 15. Lower California Creek Watershed
TCEQ Monitoring Station
City
Bacteria and Fish Community Impairment
Chlorophyll a, Nitrate and Macrobenthic Community Concern
12006
18766
11709
11990
11992
11697
12010
1232C_01
1232C_02
1232C_03
1235_01
1232_02
1232A_01
1232A_02
1232B_01
1232B_02
1232_03
1232_04
1236_01
1233B_01
1233B_0
Stamford
Lueders
Anson
Hawley
Albany
Lake Stamford
Paint Creek
California Creek
Clear Fork Brazos River
Land Use Land Cover
Developed - 4.57%
Planted/Cultivated - 56.93%
Herbaceous/Shrub - 32.87%
Forest - 0.47%
Wetlands - 0.08%
Water - 0.08%
Barren <0.01%
0
3
6
12 Miles
N
Brazos River Authority

Lower California Creek Watershed

Watershed Description:
The Lower California Creek Watershed is 257 square miles in area.

Land Use Land Cover in Watershed (Figure 15):
There is one city, Anson, with an estimated population of 2400 in the Lower California Creek Watershed. The dominant land cover in the watershed is the planted/cultivated category (≈57%) followed by herbaceous/shrub land (≈33%). The planted/cultivated category consists of a mix of cotton and winter wheat with scattered sorghum as well.

Segments in Watershed (Figure 15):
1232A_01: Portion of California Creek from confluence with Paint Creek in Haskell County upstream to confluence with Thompson Creek in Jones County.

Monitoring Station: 11709 - CALIFORNIA CREEK AT FM 142 EAST OF STAMFORD

Impairments in Watershed Description (Figure 15):

- 1232A_01: Recreational Use – Bacteria; Aquatic Life Use – Fish Community
  - There are also concerns for chlorophyll-*a*, nitrate, and the macrobenthic community.

Possible Contributions if Impaired:

Point Sources:

- No known point sources in the watershed.

Non-point sources:

- Agricultural runoff – The land cover in the watershed is over 50% planted/cultivated category (≈57).

Potential non-State Agency Stakeholders:

- City of Corinth
- City of Anson
- City of Funston
- Jones County
- Haskell County

Actions taken if impaired:

- No action taken at this time.

Recommendations if Impaired:

- An aquatic life monitoring (ALM) event has been recommended for 1232A_01. An ALM is conducted by collecting habitat data and collecting and identifying freshwater benthic macroinvertebrates and fish. This data is collected in a manner that, in most cases, permits an assessment of community composition and integrity.

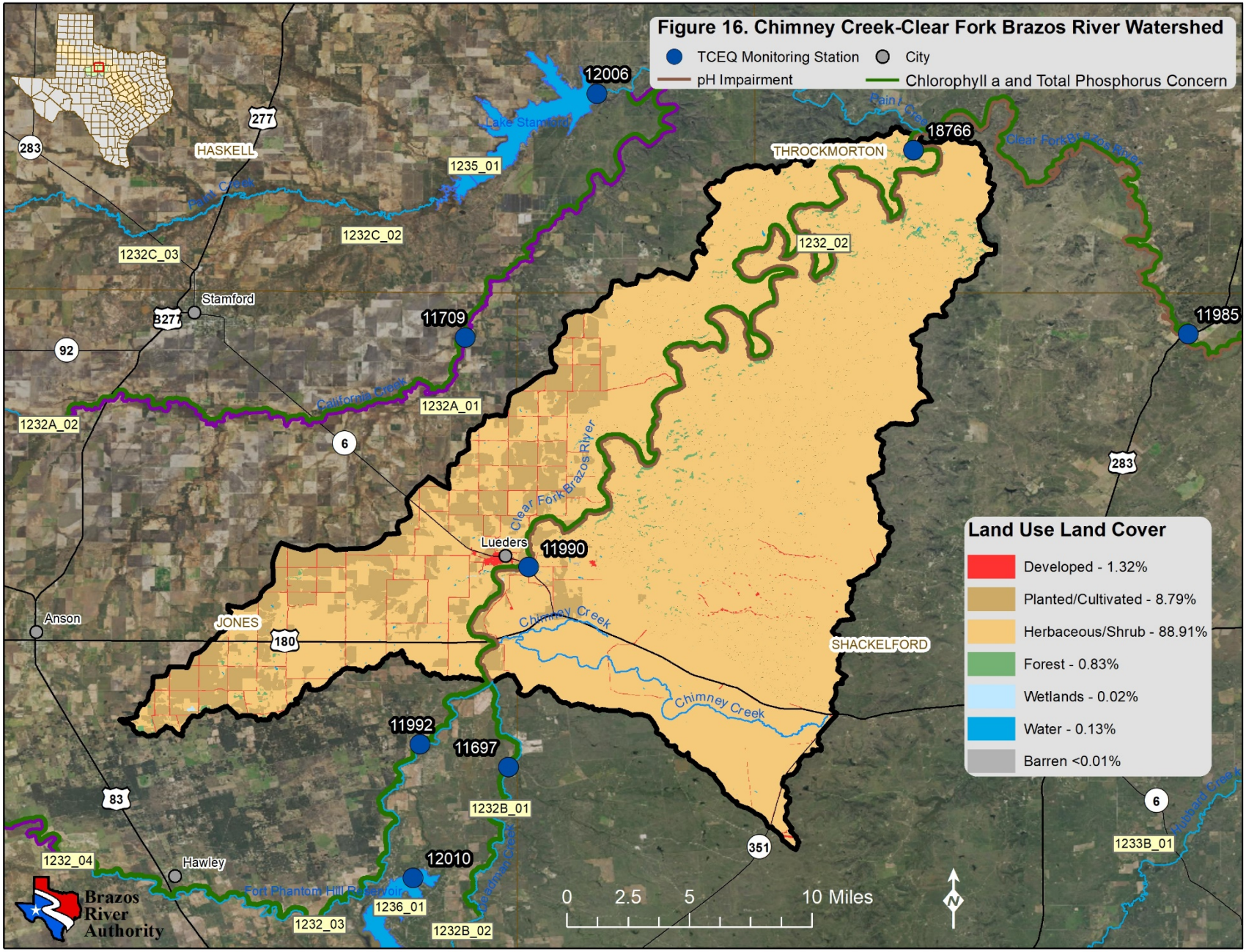


Figure 16. Chimney Creek-Clear Fork Brazos River Watershed
TCEQ Monitoring Station
City
pH Impairment
Chlorophyll a and Total Phosphorus Concern
12006
18766
11985
11709
11990
11992
11697
12010
THROCKMORTON
HASKELL
Stamford
Lueders
Anson
JONES
SHACKELFORD
Hawley
Lake Stamford
Clear Fork Brazos River
Chimney Creek
California Creek
Fort Phantom Hill Reservoir
1235_01
1232C_02
1232C_03
1232_02
1232A_01
1232A_02
1232_04
1232_03
1232B_01
1232B_02
1236_01
1233B_01
277
283
B277
92
6
180
83
351
Land Use Land Cover
Developed - 1.32%
Planted/Cultivated - 8.79%
Herbaceous/Shrub - 88.91%
Forest - 0.83%
Wetlands - 0.02%
Water - 0.13%
Barren <0.01%
0
2.5
5
10 Miles
N
Brazos River Authority

Chimney Creek-Clear Fork Brazos River Watershed

Watershed Description:
The Chimney Creek-Clear Fork Brazos River Watershed is 356 square miles in area.

Land Use Land Cover in Watershed (Figure 16):
There is one city, Lueders, with an estimated population of 340 in the Chimney Creek-Clear Fork Brazos River Watershed. The dominant land cover in the watershed is herbaceous/shrub land (≈89%). There is quarry activity in the upstream portion of 1232_02 near Leuders.

Segments in Watershed (Figure 16):
Portion of 1232_02: Clear Fork Brazos River from confluence with Hubbard Creek upstream to confluence with Deadman Creek

Monitoring Station: 11990 - CLEAR FORK BRAZOS RIVER IMMEDIATELY DOWNSTREAM OF SH 6 IN LUEDERS (Figure 16.1)

Monitoring Station: 18766 - CLEAR FORK BRAZOS RIVER AT BURKETT BEND 1.41 KM UPSTREAM OF PAINT CREEK CONFLUENCE

Impairments in Watershed Description (Figure 16):

- 1232_02: General Use – high pH
  - There are also concerns for chlorophyll-*a* and total phosphorus.

Possible Contributions if Impaired:

Point Sources: There is quarry activity in the upstream portion of 1232_02 near Leuders. Limestone quarries can contribute to higher pH levels due to carbonate in the limestone.

Non-point sources:

- Wildlife – Approximately 89% of the watershed is covered by herbaceous and shrub vegetation with therefore there may be a significant amount of wildlife activity.
- Agricultural runoff – Although there is not a significant portion of the planted/cultivated category (≈9%) in the watershed, the agricultural activity in the upstream, western portion of the watershed may contribute to the nutrient concerns which in turn contribute to the high pH impairment.

Potential non-State Agency Stakeholders:

- City of Lueders
- Jones County
- Shackleford County
- Throckmorton County

Actions taken if impaired:

- No action taken at this time.

Recommendations if Impaired:

- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

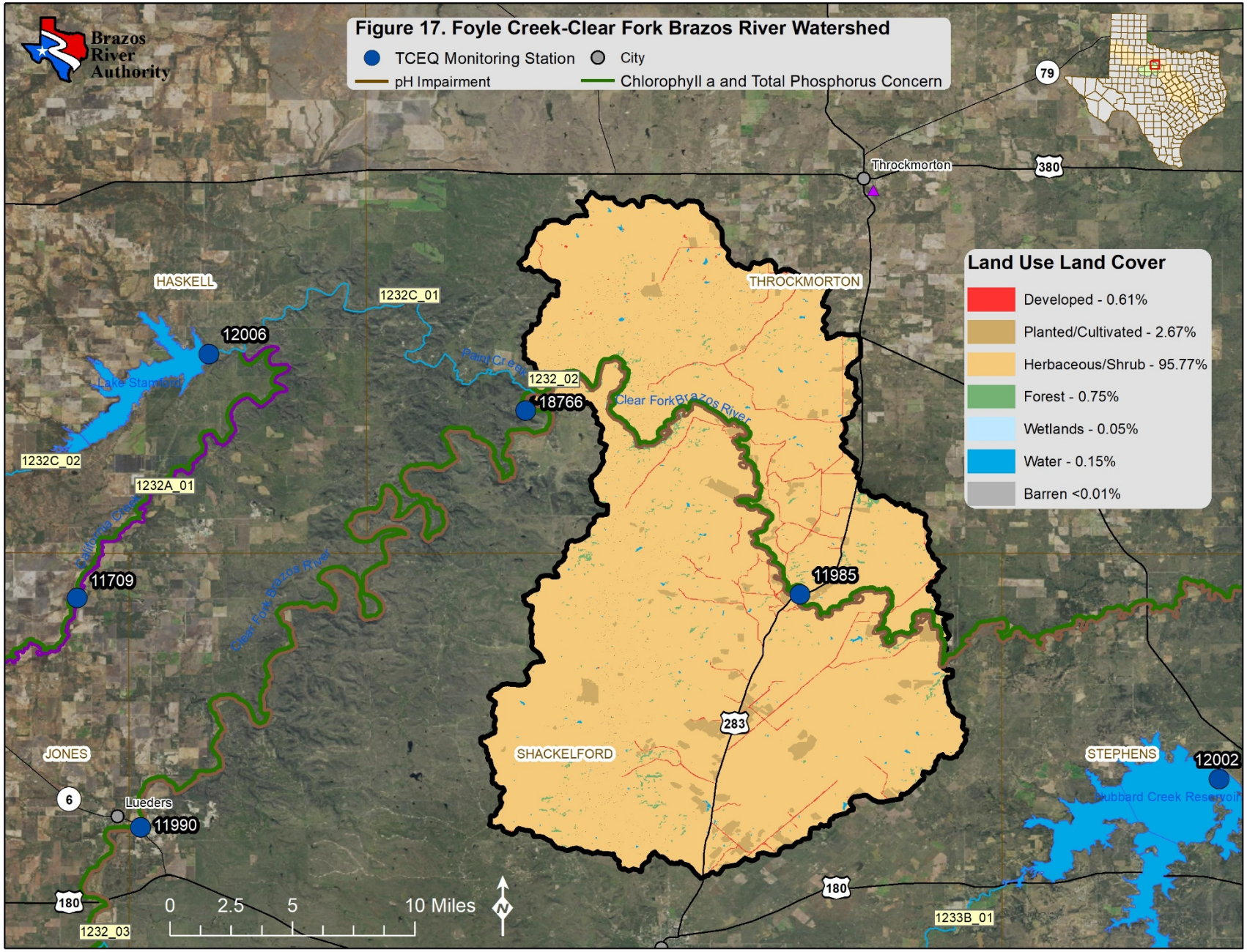


Figure 17. Foyle Creek-Clear Fork Brazos River Watershed
TCEQ Monitoring Station
City
pH Impairment
Chlorophyll a and Total Phosphorus Concern
Brazos River Authority
Land Use Land Cover
Developed - 0.61%
Planted/Cultivated - 2.67%
Herbaceous/Shrub - 95.77%
Forest - 0.75%
Wetlands - 0.05%
Water - 0.15%
Barren <0.01%
HASKELL
THROCKMORTON
SHACKELFORD
JONES
STEPHENS
Throckmorton
Lueders
Lake Stamford
Hubbard Creek Reservoir
Clear Fork Brazos River
Paint Creek
California Creek
1232C_01
1232C_02
1232A_01
1232_02
1232_03
1233B_01
12006
18766
11709
11985
11990
12002
79
380
283
180
6
0 2.5 5 10 Miles
N

Foyle Creek-Clear Fork Brazos River Watershed

Watershed Description:
The Foyle Creek-Clear Fork Brazos River Watershed is 305 square miles in area.

Land Use Land Cover in Watershed (Figure 17):
There are no cities or permitted discharges in the Foyle Creek-Clear Fork Brazos River Watershed. The dominant land cover in the watershed is herbaceous/shrub land.

Segments in Watershed (Figure 17):
The upstream portion of 1232_02: Clear Fork Brazos River from confluence with Hubbard Creek upstream to confluence with Deadman Creek

Monitoring Station: 11985 – CLEAR FORK BRAZOS RIVER AT US 283 NORTHEAST OF FORT GRIFFIN (Figure 17.1)

Impairments in Watershed Description (Figure 16):

- 1232_02: General Use – high pH
    - There are also concerns for chlorophyll-*a* and total phosphorus.

Possible Contributions if Impaired:

Point Sources: Although there are no known point sources in the watershed, the mining/quarry activity in the upstream, western portion of the watershed may contribute to the high pH impairment.

Non-point sources:

- Wildlife – Approximately 96% of the watershed is covered by herbaceous and shrub vegetation with therefore there may be a significant amount of wildlife activity.

Potential non-State Agency Stakeholders:

- Throckmorton County
- Shackelford County

Actions taken if impaired:

No action taken at this time.

Recommendations if Impaired:

- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

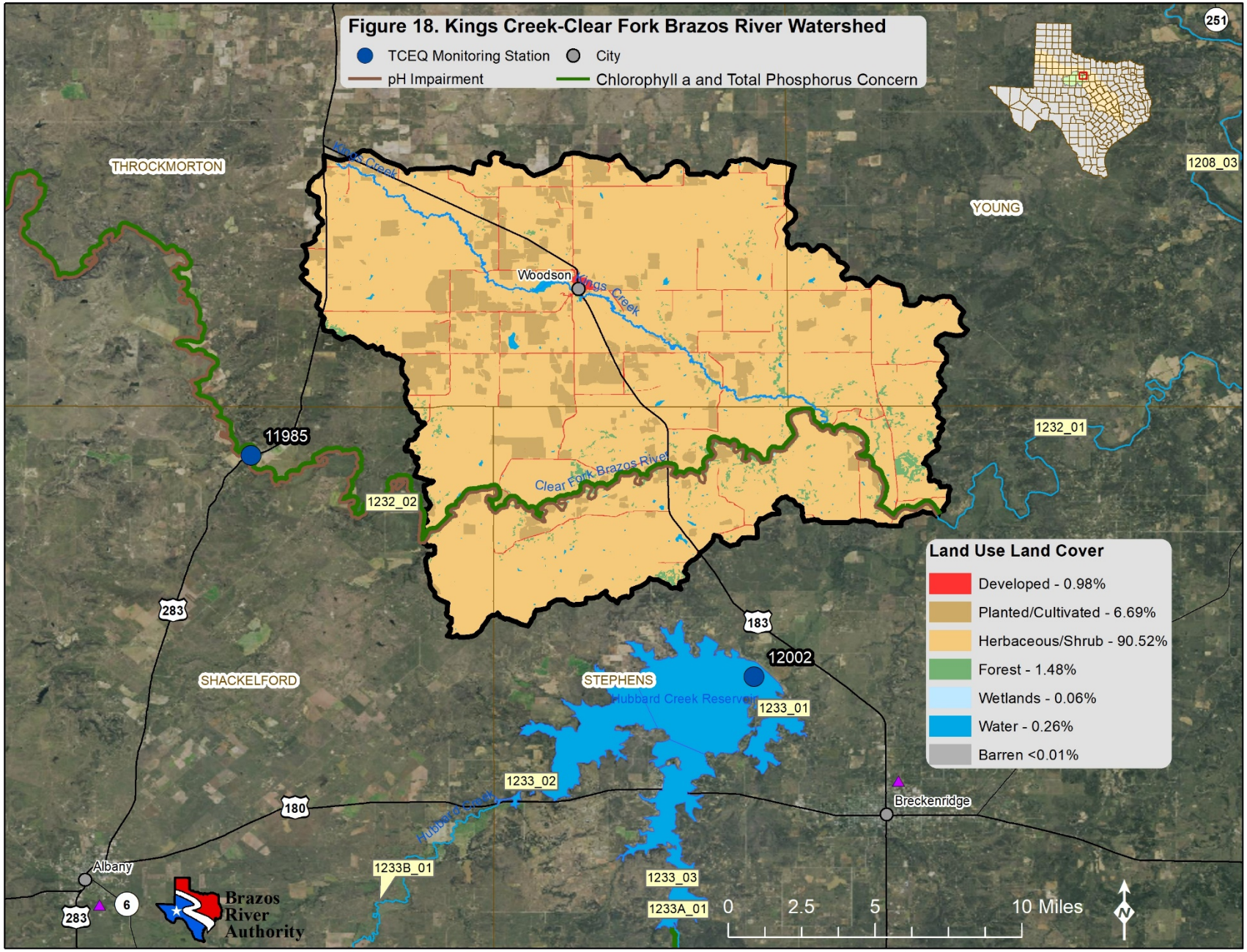


Figure 18. Kings Creek-Clear Fork Brazos River Watershed
TCEQ Monitoring Station
City
pH Impairment
Chlorophyll a and Total Phosphorus Concern
THROCKMORTON
YOUNG
Woodson
Kings Creek
Clear Fork Brazos River
11985
1232_02
1232_01
1208_03
251
283
183
12002
SHACKELFORD
STEPHENS
Hubbard Creek Reservoir
1233_01
1233_02
180
Breckenridge
Albany
1233B_01
1233_03
1233A_01
6
Brazos River Authority
0
2.5
5
10 Miles
N
Land Use Land Cover
Developed - 0.98%
Planted/Cultivated - 6.69%
Herbaceous/Shrub - 90.52%
Forest - 1.48%
Wetlands - 0.06%
Water - 0.26%
Barren <0.01%

Kings Creek-Clear Fork Brazos River Watershed

Watershed Description:
The Kings Creek-Clear Fork Brazos River Watershed is 206 square miles in area.

Land Use Land Cover in Watershed (Figure 18):
There is one city, Woodson, with an estimated population of 260 in the Kings Creek-Clear Fork Brazos River Watershed. There is one small reservoir, Woodson Lake, impounding Kings Creek. The dominant land cover in the watershed is herbaceous/shrub land (≈91%).

Segments in Watershed (Figure 18):
The downstream portion of 1232_02: Clear Fork Brazos River from confluence with Hubbard Creek upstream to confluence with Deadman Creek

Figure 18.1 - Clear Fork Brazos River at US 183, Stephens Co.

Impairments in Watershed Description (Figure 18):

- 1232_02: General Use – high pH
    - There are also concerns for chlorophyll-*a* and total phosphorus.

Possible Contributions if Impaired:

Point Sources: No known point source contributions.

Non-point sources:

- Wildlife – Approximately 91% of the watershed is covered by herbaceous and shrub vegetation with therefore there may be a significant amount of wildlife activity.
- Agricultural runoff – Although there is not a significant portion of the planted/cultivated category (≈7%) in the watershed, the agricultural activity in the watershed and in the watershed upstream (Chimney Creek-Clear Fork Brazos River Watershed) may contribute to the nutrient concerns which in turn contribute to the high pH impairment. Due to increased availability of

nutrients, eutrophication can occur. High rates of photosynthesis associated with eutrophication can deplete dissolved inorganic carbon and raise pH to extreme levels during the day.

Potential non-State Agency Stakeholders:

- City of Woodson
- Throckmorton County
- Stephens County

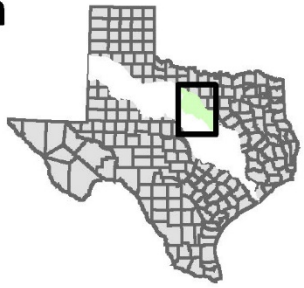
Actions taken if impaired:

- No action taken at this time.

Recommendations if Impaired:

- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

Upper Watershed of the Brazos River Basin



The Upper Watershed of the Brazos River drains approximately 4,725 square miles stretching from the Salt and Double Mountain Fork confluence to the impoundment at the Lake Whitney Dam. The river is generally wide with banks heavily vegetated with elm, willow, oak, and juniper trees. The land use is largely agricultural with row crops, rangeland, and pasture. There are three major urban areas in close proximity to the river.

Graham
Mineral Wells
Palo Pinto
Granbury
Cleburn
Glen Rose
1208_01
1204A_01
1227_01
1227_02
1
2
3
79
114
251
16
281
337
180
20
377
144
67
171
174
22

Impairments from 2018 IR

- Bacteria Impairment
- Total Dissolved Solids and Sulfate Impairment
- City

Watersheds of Interest

1 - Possom Kingdom Lake
2 - Camp Creek
3 - Nolan River

Brazos River Authority

0 10 20
Miles

N

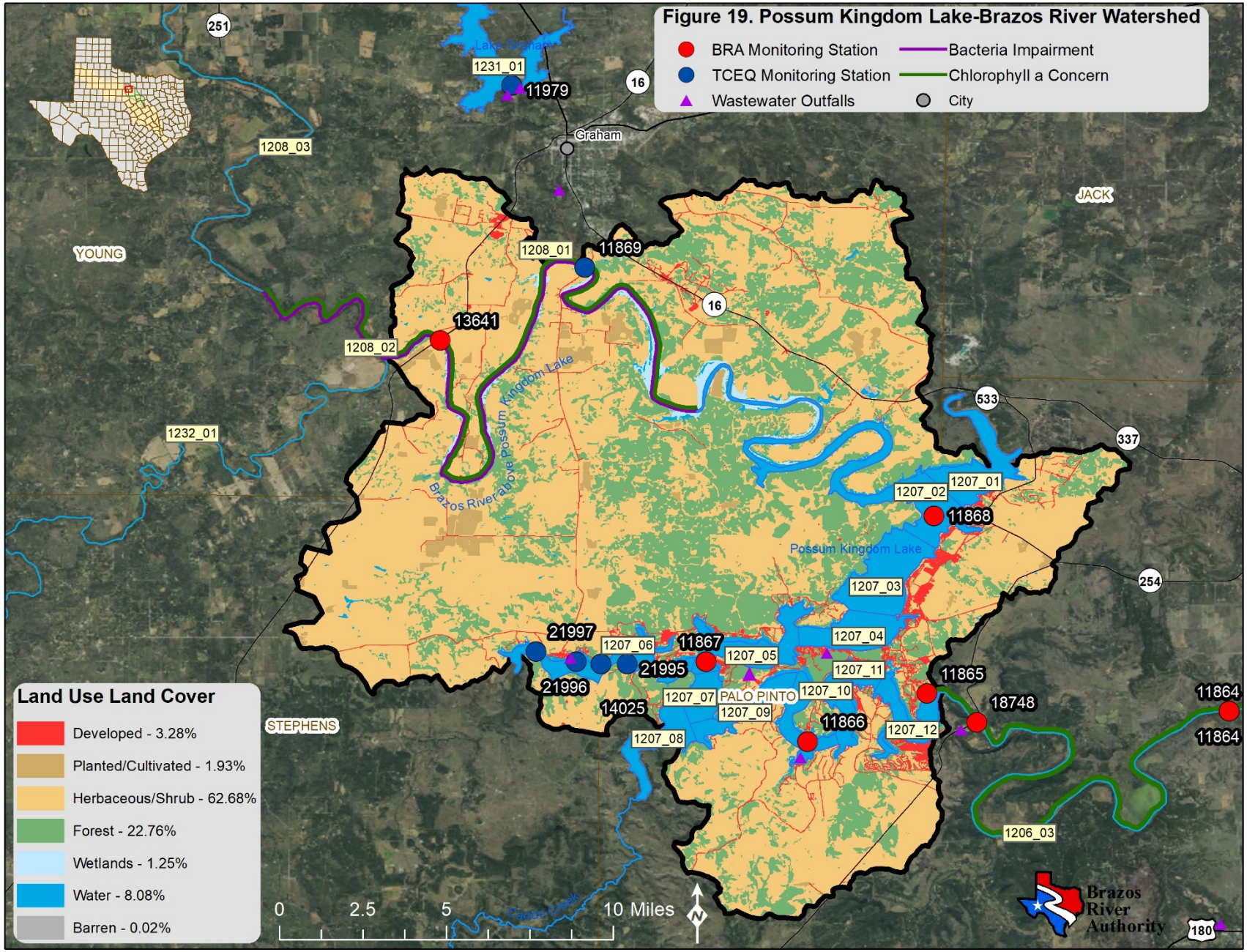


Figure 19. Possum Kingdom Lake-Brazos River Watershed
BRA Monitoring Station
TCEQ Monitoring Station
Wastewater Outfalls
Bacteria Impairment
Chlorophyll a Concern
City
Land Use Land Cover
Developed - 3.28%
Planted/Cultivated - 1.93%
Herbaceous/Shrub - 62.68%
Forest - 22.76%
Wetlands - 1.25%
Water - 8.08%
Barren - 0.02%
0 2.5 5 10 Miles
Graham
Lake Graham
Possum Kingdom Lake
Brazos River above Possum Kingdom Lake
PALO PINTO
YOUNG
JACK
STEPHENS
1231_01
11979
1208_03
1208_01
11869
1208_02
13641
1232_01
1207_01
1207_02
11868
1207_03
1207_04
1207_05
11867
1207_06
21997
21995
21996
1207_07
14025
1207_08
1207_09
1207_10
1207_11
11865
18748
1207_12
11866
11864
11864
1206_03
Brazos River Authority
16
251
533
337
254
180

Possum Kingdom Lake-Brazos River Watershed

Watershed Description:
The Possum Kingdom Lake-Brazos River Watershed is 263 square miles in area.

Land Use Land Cover in Watershed (Figure 19):
There are no cities in the watershed. There are four wastewater outfalls in the watershed adjacent to Possum Kingdom Lake. The majority of Possum Kingdom Lake lies within the watershed. Dominant landcover includes herbaceous/shrubland (≈63%) with a moderate amount of forested area (≈23%) and a smaller amount of open water (≈8%).

Segments in Watershed (Figure 19):

- 1207_02: Possum Kingdom Lake, Deep Elm Creek arm
  - Monitoring Station: 11868 - POSSUM KINGDOM RESERVOIR DEEP ELM CREEK ARM 597 METERS NORTH AND 880 METERS WEST OF INTERSECTION OF ANTHONY LOOP AND LEFTYS COURT
- 1207_03: Possum Kingdom Lake, portion of segment west of SH 16
- 1207_04: Possum Kingdom Lake, portion of lake containing Costello Island
- 1207_05: Possum Kingdom Lake, Elm Creek arm of segment
  - Monitoring Station: 11867 - POSSUM KINGDOM RESERVOIR NEAR END OF FM 2951, 67 METERS NORTH AND 864 METERS WEST OF INTERSECTION OF FM 2951 AND SANBAR RD
- 1207_06: Possum Kingdom Lake, Veale Creek arm of segment
  - Monitoring Station: 21997 - POSSUM KINGDOM LAKE APPROXIMATELY 0.9 KM SOUTH OF THE INTERSECTION OF FM 1148 AND PRIVATE ROAD 11485
  - Monitoring Station: 21996 - POSSUM KINGDOM LAKE APPROXIMATELY 1.5 KILOMETERS SOUTH OF THE INTERSECTION OF FM 1148 AND FM 1287
  - Monitoring Station: 14025 - POSSUM KINGDOM LAKE 1.57 KM SOUTH AND 1.26 KILOMETERS EAST OF INTERSECTION OF FM 1148 AND FM 1287 SITE P07 USGS 325301098342901
  - Monitoring Station: 21995 - POSSUM KINGDOM LAKE NEAR POSSUM KINGDOM STATE PARK CAMPSITE NO. 17
- 1207_07: Possum Kingdom Lake, portion of lake adjacent to northeast corner of state park
- 1207_08: Possum Kingdom Lake, Caddo Creek arm of Lake
- 1207_09: Possum Kingdom Lake, portion of lake south of FM 2951
- 1207_10: Possum Kingdom Lake, Bluff Creek arm of lake
  - Monitoring Station: 11866 - POSSUM KINGDOM RESERVOIR NEAR JOHNSON BEND 437 METERS NORTH AND 429 METERS WEST OF INTERSETION OF HELLS GATE LOOP AND HELLS POINT RD
- 1207_11 Possum Kingdom Lake, Jewell Creek arm of lake
- 1207_12: Possum Kingdom Lake, downstream portion of lake
  - Monitoring Station: 11865 - POSSUM KINGDOM RESERVOIR NEAR DAM 696 METERS WEST AND 221 METERS SOUTH OF NORTHERN EDGE OF DAM
- 1208_01: Brazos River above Possum Kingdom Lake, portion of segment from confluence with Possum Kingdom Reservoir headwaters upstream to confluence with Spring Branch in Young County

Monitoring Station: 11869 - BRAZOS RIVER IMMEDIATELY UPSTREAM OF FM 1287 SOUTH OF GRAHAM (Figure 19.1)

- 1208_02: Brazos River above Possum Kingdom Lake, portion of segment from confluence with Spring Branch upstream to confluence with Fish Creek

  Monitoring Station: 13641 - BRAZOS RIVER 72 METERS DOWNSTREAM OF SH 67, 2.0 MILES NORTHEAST OF SOUTH BEND 2.81 KILOMETERS DOWNSTREAM FROM THE CONFLUENCE WITH CLEAR FORK BRAZOS RIVER (Figure 19.2)

Impairments in Watershed Description (Figure 19):

- 1208_01 and 1208_02: Recreational Use—Bacteria

There are concerns for chlorophyll-*a* in each of these AUs.

Possible Contributions if Impaired:

Point Sources: No known point source contributions.

Non-point sources:

- Wildlife – Herbaceous/shrub and forested areas account for approximately 86% of the watershed which is suitable for wildlife.

Potential non-State Agency Stakeholders:

- Stephens County
- Palo Pinto County
- Young County
- Any marinas or other businesses on or that serve Possum Kingdom Lake

Actions taken if impaired:

- An RUAA has been conducted in segment 1208 and results have led to the recommendation is that the segment remain classified as a PCR segment.

Recommendations if impaired:

- Continue routine monitoring of the established long-term stations in this watershed.
- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

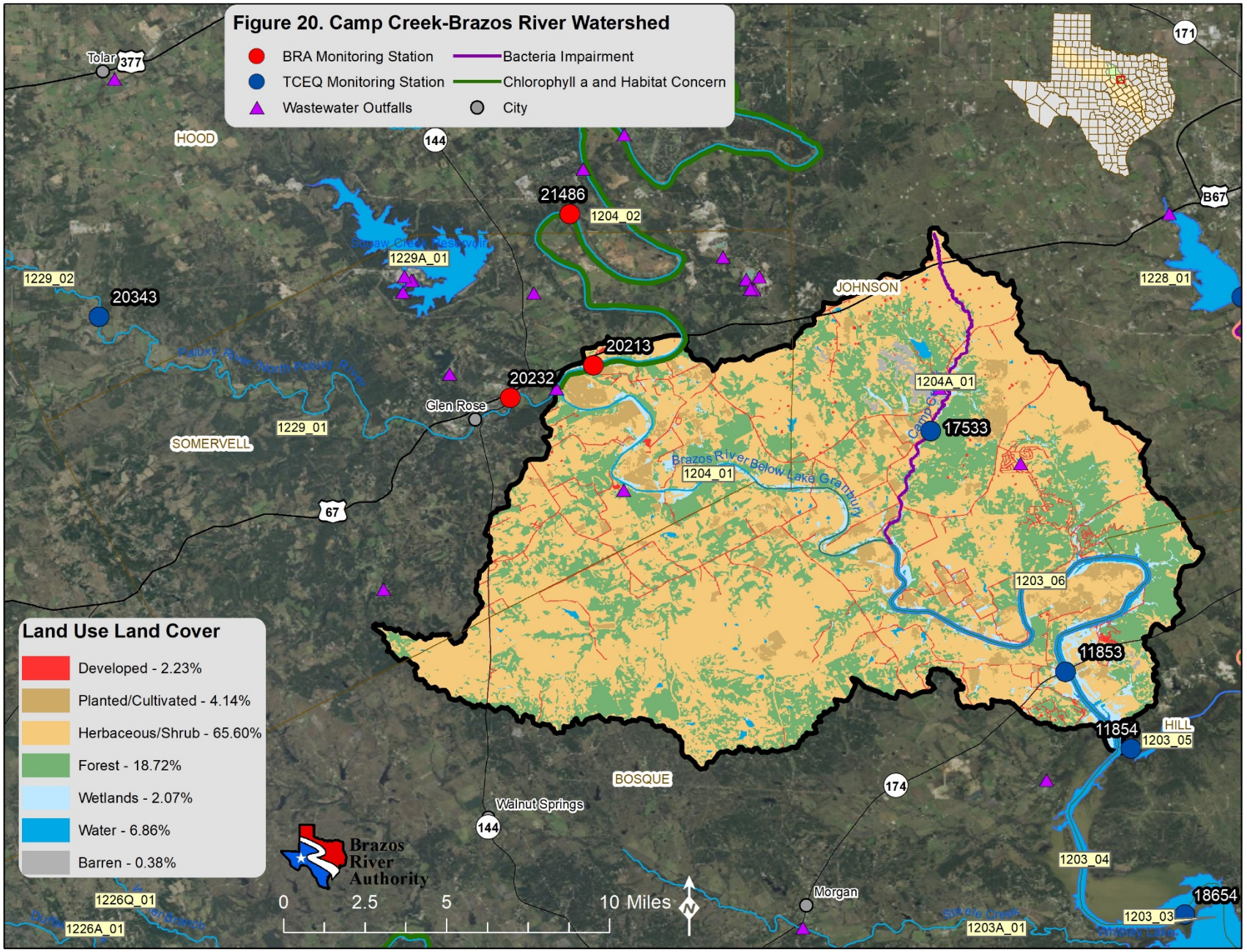


Figure 20. Camp Creek-Brazos River Watershed
BRA Monitoring Station
TCEQ Monitoring Station
Wastewater Outfalls
Bacteria Impairment
Chlorophyll a and Habitat Concern
City
Land Use Land Cover
Developed - 2.23%
Planted/Cultivated - 4.14%
Herbaceous/Shrub - 65.60%
Forest - 18.72%
Wetlands - 2.07%
Water - 6.86%
Barren - 0.38%
Brazos River Authority
0 2.5 5 10 Miles
Tolar
377
HOOD
144
21486
1204_02
Squaw Creek Reservoir
1229A_01
1229_02
20343
Paluxy River/North Paluxy River
20213
20232
Glen Rose
1229_01
SOMERVELL
67
JOHNSON
1204A_01
Camp Cr
17533
Brazos River Below Lake Granbury
1204_01
1203_06
11853
11854
HILL
1203_05
BOSQUE
174
Walnut Springs
144
1203_04
Morgan
18654
1203_03
1203A_01
1226Q_01
1226A_01
171
B67
1228_01

Camp Creek- Brazos River Watershed

Watershed Description:
The Camp Creek-Brazos River Watershed is 204 square miles in area.

Land Use Land Cover in Watershed (Figure 20):
There are no cities, but there are three wastewater outfalls in the watershed. Dominant landcover includes herbaceous/shrubland (≈66%), with a moderate amount forested area (≈19%).

Segments in Watershed (Figure 20):

- 1203_06: Lake Whitney, Brazos River Arm
  Monitoring Station: 11853 - LAKE WHITNEY AT SH 174, 150 METERS NORTH AND 339 METERS EAST OF INTERSECTION OF SH 174 AND BOSQUE CR 1185 NORTHEAST OF MORGAN (Figure 20.1)

- 1204_01: Brazos River below Lake Granbury, from the confluence with Camp Creek upstream to the confluence with the Paluxy River in Somervell County

- 1204_02: Brazos River below Lake Granbury, from the confluence with the Paluxy River upstream to DeCordova Bend Dam in Hood County
  Monitoring Station: 20213 - BRAZOS RIVER 20 METERS OFF NORTH BANK AT FM 200 NORTHEAST OF GLEN ROSE (Figure 20.2)

Figure 20.2 – Station 11871 - BRAZOS RIVER AT FM 200

- 1204A_01: Camp Creek
  Monitoring Station: 17533 - CAMP CREEK EAST OF FM 1434 1.01 KM UPSTREAM OF CONFLUENCE WITH WILSON BRANCH SOUTH OF CR 200 SOUTH OF CLEBURNE STATE PARK (Figure 20.3)

Figure 20.3 - Station 17533 - CAMP CREEK EAST OF FM 1434

Impairments in Watershed Description (Figure 20):

- 1204A_01: Recreational Use – Bacteria
    - There are concerns for chlorophyll-*a* and habitat in 1204_02.

Possible Contributions if Impaired:

Point Sources: There are three wastewater outfalls in the watershed.

Non-point sources:

- Wildlife – Herbaceous/shrub and forested areas account for approximately 84% of the watershed which is suitable for wildlife.

Potential non-State Agency Stakeholders:

- City of Rainbow
- Somervell County
- Johnson County
- Bosque County
- Any businesses or marinas that serve Lake Whitney

Actions taken if impaired:

- An RUAA has been conducted in segment 1204A and results have led to the recommendation that the segment remain classified as a PCR segment.

Recommendations if impaired:

- There had been no data collected in 1204A_01 since 2008. Continue the monitoring that resumed in FY 2020 for station 17533.
- A watershed characterization study, consisting of a set of water and habitat assessments compiling hydrology, geology, wildlife, LULC, and water quality data to inform on the best way to improve water quality in a watershed, may be appropriate.

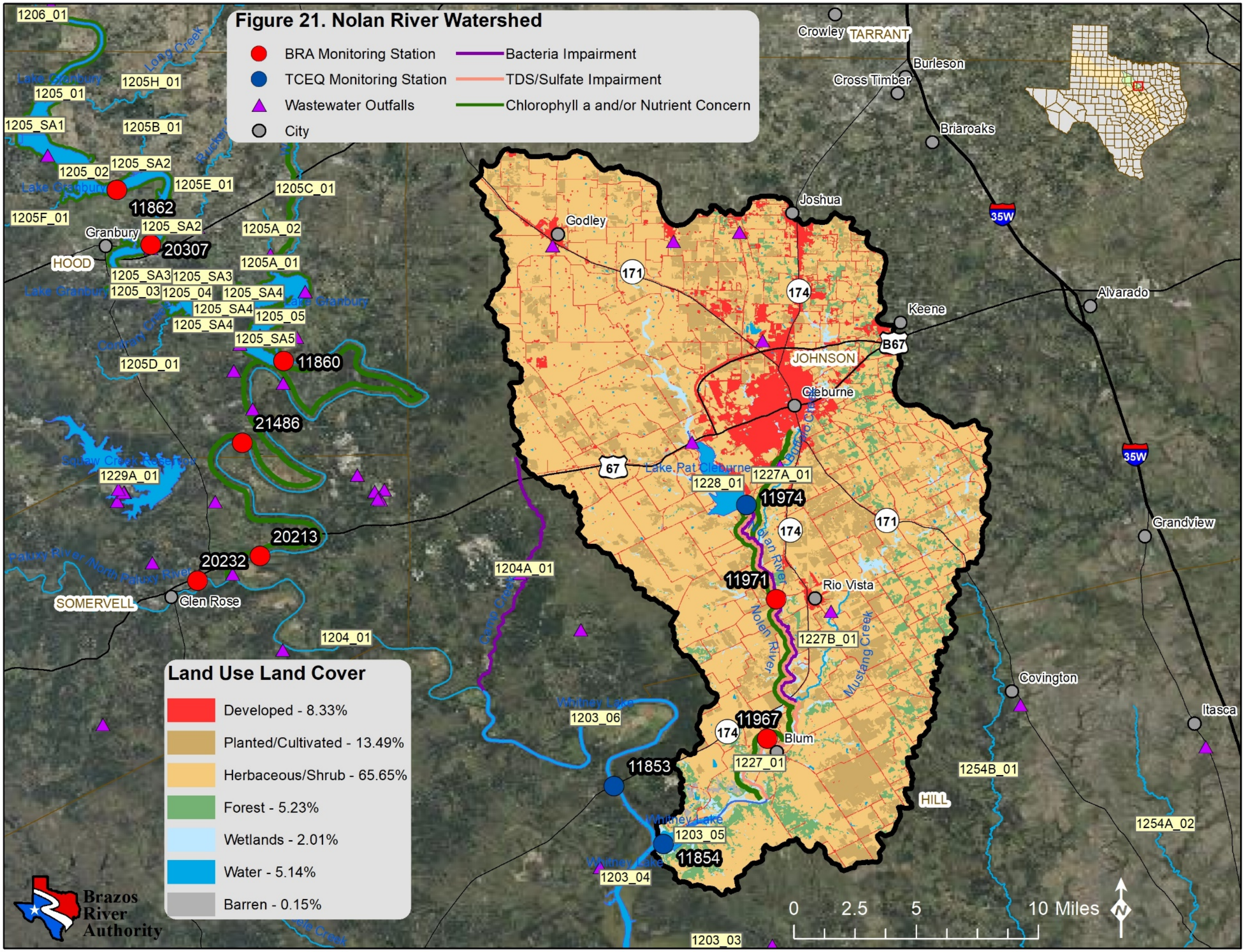


Figure 21. Nolan River Watershed

Nolan River Watershed

Watershed Description:
The Nolan River Watershed is 318 square miles in area.

Land Use Land Cover in Watershed (Figure 21):
There are five cities and seven wastewater outfalls in the watershed. Cleburne is the most populous with an estimated population of 30,000, followed by Joshua with an estimated population of 7800. Godley and Rio Vista both have estimated populations near 1000. Blum has an estimated population of less than 500. Dominant landcover includes herbaceous/shrubland (≈67%), with smaller amounts of the planted/cultivated category (≈13%) and developed land (≈8%). The planted/cultivated category is planted with a mix of corn and winter wheat. Lake Pat Cleburne lies entirely within this watershed. A portion of Lake Whitney lies within the watershed.

Segments in Watershed (Figure 21):

- 1203_05: Lake Whitney, Nolan River Arm
  Monitoring Station: 11854 - LAKE WHITNEY NOLAN RIVER ARM IMMEDIATELY UPSTREAM OF NOLAN RIVER CONFLUENCE WITH THE BRAZOS RIVER
- 1227_01: Nolan River, from confluence with Lake Whitney upstream to confluence with Mustang Creek in Hill County
  Monitoring Station: 11967 - NOLAN RIVER 75 METERS UPSTREAM OF FM 933 IN BLUM
- 1227_02: Nolan River, from confluence with Mustang Creek in Hill County upstream to confluence with Lake Pat Cleburne Dam in Johnson County (Figure 21.1)

Figure 21.1 – Station 11967 - NOLAN RIVER AT FM 933

Monitoring Station: 11971 - NOLAN RIVER IMMEDIATELY UPSTREAM OF FM 916 WEST OF RIO VISTA (Figure 21.2)

Figure 21.2 – Station 11971 - NOLAN RIVER AT FM 916

- 1227A_01: Buffalo Creek
- 1227B_01: Mustang Creek
- 1228_01: Lake Pat Cleburne

  Monitoring Station: 11974 - PAT CLEBURNE RESERVOIR MID LAKE NEAR DAM 115 METERS SOUTH AND 334 METERS WEST OF INTERSECTION OF LAKESHORE DRIVE AND SOUTH NOLAN RIVER ROAD

Impairments in Watershed Description (Figure 21):

- 1227_01: General Use - Total Dissolved Solids, Sulfate
  - There is also a concern for chlorophyll-*a.*
- 1227_02: Recreational Use - Bacteria, Total Dissolved Solids, Sulfate
  - There are concerns for chlorophyll-*a*, nitrate and total phosphorus.

Possible Contributions if Impaired:

Point Sources: There are five cities and seven wastewater outfalls. The ground water in the watershed contains dissolved solids which is used by industry in the area. The local municipal wastewater treatment cannot remove the naturally occurring dissolved solids and thus discharges them to the Nolan River.

Non-point sources:

- Wildlife: Herbaceous/shrubland is dominant in the watershed (≈67%) which is suitable for wildlife.
- Agricultural runoff: Agricultural activity (≈13%) in the watershed could contribute to runoff.
- Ground water in the watershed contains naturally occurring dissolved solids.

Potential non-State Agency Stakeholders:

- City of Joshua
- City of Godley
- City of Cleburne
- City of Rio Vista
- City of Blum
- Johnson County
- Bosque County
- Any businesses or marinas that serve Lake Whitney or Lake Pat Cleburne

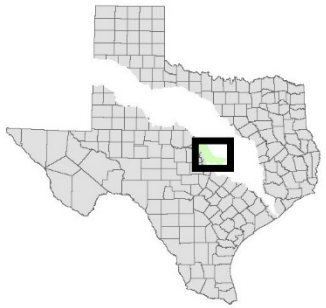
Actions taken if impaired:

- A Texas Water Quality Standards (WQS) review for total dissolved solids, chloride and sulfate was completed for segment 1227. TCEQ recommends increased criteria values for these parameters. Environmental Protection Agency (EPA) approval of 2010 WQS is pending.

Recommendations if Impaired:

- Await EPA review and approval of water quality standards before a management strategy is selected.

Lampasas River Watershed



The Lampasas River Watershed drains approximately 1,502 square miles through Lampasas and portions of Mills, Burnet, Williamson and Bell Counties. Land use is predominantly agricultural, although development has increased around Stillhouse Hollow Lake. The majority of the Lampasas River watershed drains into Stillhouse Hollow Lake. Salado Creek drains into the Lampasas River below Stillhouse Hollow Lake before the confluence with the Leon River. Much of the Lampasas River has heavily vegetated banks and is characterized by low flow conditions much of the time.

Impairments from 2018 IR

- Bacteria Impairment
- Dissolved Oxygen Impairment
- City

Watersheds of Interest

1 - Lucy Creek
2 - Stillhouse Hollow Lake

Lometa
Lampasas
1
2
84
281
190
183
195
35
138
1217_03
1217_02
1217G_01
1217F_02
1216A_01
1216_01
1215_01
1217B_01
1217B_02
1217F_01
1217D_01
1217_01
1216_02
1217A_01
1217E_01

Brazos River Authority

0 10 20 Miles

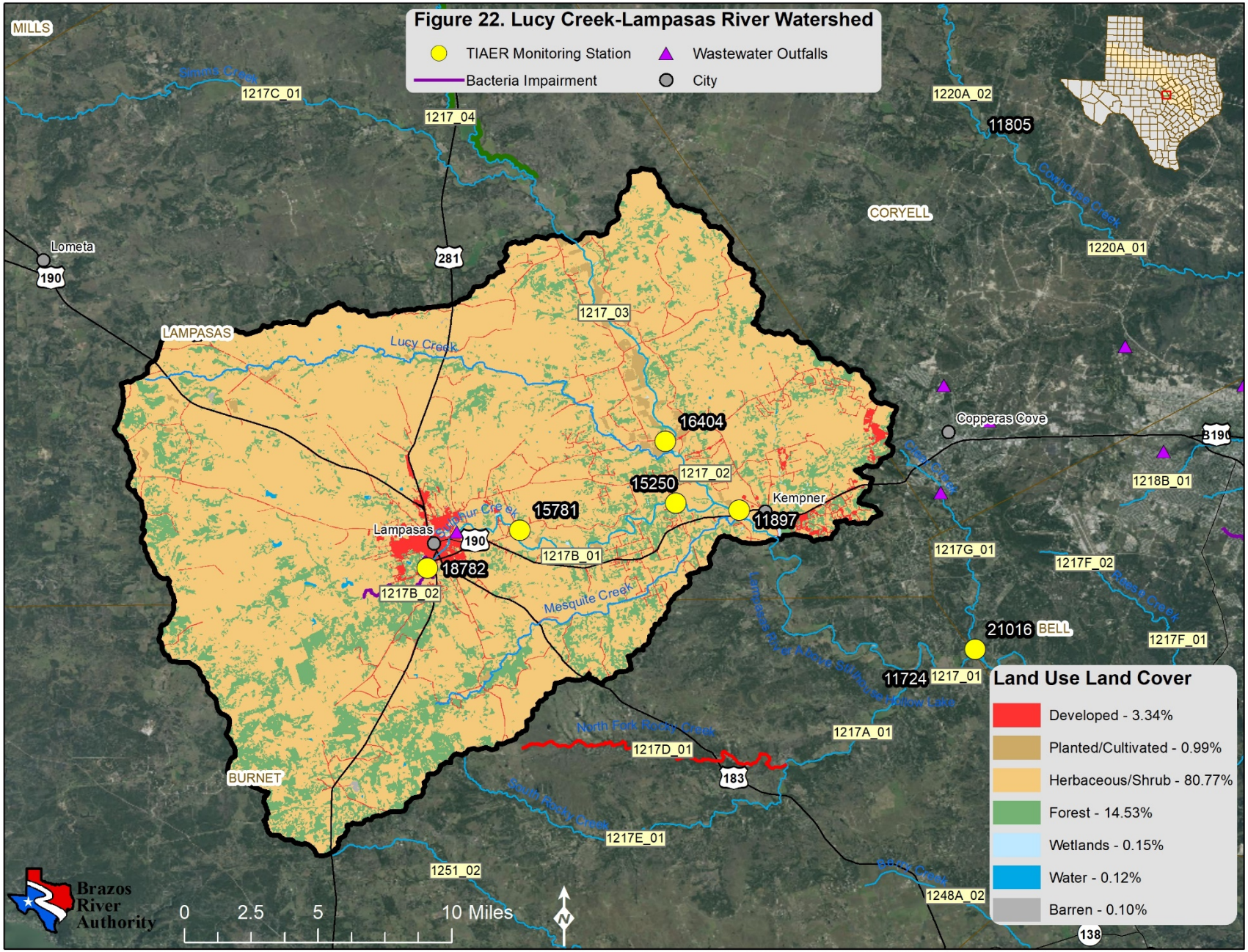


Figure 22. Lucy Creek-Lampasas River Watershed
TIAER Monitoring Station
Wastewater Outfalls
Bacteria Impairment
City
MILLS
CORYELL
LAMPASAS
BURNET
BELL
Lometa
Copperas Cove
Kempner
Lampasas
Simms Creek
Lucy Creek
Mesquite Creek
North Fork Rocky Creek
South Rocky Creek
Berry Creek
Cowhouse Creek
Reese Creek
1217C_01
1217_04
1220A_02
1220A_01
1217_03
1217_02
1217B_01
1217B_02
1217G_01
1217F_02
1217F_01
1217_01
1217A_01
1217D_01
1217E_01
1218B_01
1251_02
1248A_02
16404
15250
15781
11897
18782
11805
21016
11724
281
190
183
138
Land Use Land Cover
Developed - 3.34%
Planted/Cultivated - 0.99%
Herbaceous/Shrub - 80.77%
Forest - 14.53%
Wetlands - 0.15%
Water - 0.12%
Barren - 0.10%
Brazos River Authority
0
2.5
5
10 Miles
N

Lucy Creek Watershed

Watershed Description:
The Lucy Creek Watershed is 348 square miles in area.

Land Use Land Cover in Watershed (Figure 22):
There are two cities, Lampasas with an estimated population of just under 8000 and Kempner with an estimated population of 1100 in the watershed. There is one wastewater outfall within the watershed. The majority of land in the watershed is herbaceous/shrubland (≈81%), with a moderate portion of forested land (≈15%).

Segments in Watershed (Figure 22):

- Lucy Creek
- Upstream portion of 1217_01: Lampasas River above Stillhouse Hollow Lake, from confluence with Rock Creek in Bell County upstream to confluence with Mesquite Creek west of Kempner
- 1217_02: Lampasas River above Stillhouse Hollow Lake, from confluence with Mesquite Creek upstream to confluence with Lucy Creek

    Monitoring Station: 11897 - LAMPASAS RIVER 256 METERS UPSTREAM OF US 190 NEAR KEMPNER (Figure 22.1)

- 1217_03: Lampasas River above Stillhouse Hollow Lake, from confluence with Lucy Creek upstream to confluence with Sims Creek

    Monitoring Station: 16404 - LAMPASAS RIVER AT FM 2313 APPROXIMATELY 7 MILES NORTHWEST OF KEMPNER (Figure 22.2)

- 1217B_ 01: Sulphur Creek (unclassified water body), from confluence with the Lampasas River upstream to confluence with Burleson Creek in the city of Lampasas

  Monitoring Stations:

  15781 - SULPHUR CREEK AT LAMPASAS CR 3010 FORMERLY KNOWN AS CR 7 AND 4 KILOMETERS EAST OF LAMPASAS

  15250 - SULPHUR CREEK IMMEDIATELY DOWNSTREAM OF LAMPASAS CR 3050 FORMERLY KNOWN AS CR 8 AND 6.5 KILOMETERS EAST OF CITY OF LAMPASAS AND 1.4 KILOMETERS NORTH OF US 190

- 1217B_ 02: Sulphur Creek (unclassified water body), from the confluence with Burleson Creek upstream to the confluences with Donalson Creek and Espy Branch west of Lampasas

  Monitoring Station:

  18782 - SULPHUR CREEK AT NARUNA RD IN LAMPASAS (Figure 22.3)

Impairments in Watershed Description (Figure 22):

- 1217B_02: Recreational Use—Bacteria

Possible Contributions if Impaired:

Point Sources: There are two cities and one municipal wastewater outfall within the watershed. However, the outfall and most of the city is downstream of 1218B_02.

Non-point sources:

- Wildlife: There are significant herbaceous/shrubland and forested areas (≈95%) in the watershed which is suitable for wildlife.

Potential non-State Agency Stakeholders:

- City of Lampasas
- City of Kempner
- Lampasas County
- Coryell County
- Burnet County

Actions taken if impaired:

- In 2009, the Lampasas River Watershed Partnership, area residents and other stakeholders worked to develop a Watershed Protection Plan (WPP) to address water quality concerns within the watershed. The Partnership has evaluated water quality issues and made recommendations for voluntary pollutant load reductions and management measures. A draft Lampasas River Watershed Protection Plan was submitted to EPA in the Spring of 2013, approved by the EPA in May 2013 and by the Steering Committee in September 2013. The project is in the

implementation phase. Recommended management measures include a host of agriculture nonpoint source measures, wildlife and feral hog management measures and urban management measures. For more information visit the web site at Lampasas River Watershed Protection Plan.

Recommendations if impaired:

- Continue to follow and implement recommended management measures outlined in the Lampasas River WPP and monitor for water quality improvements.

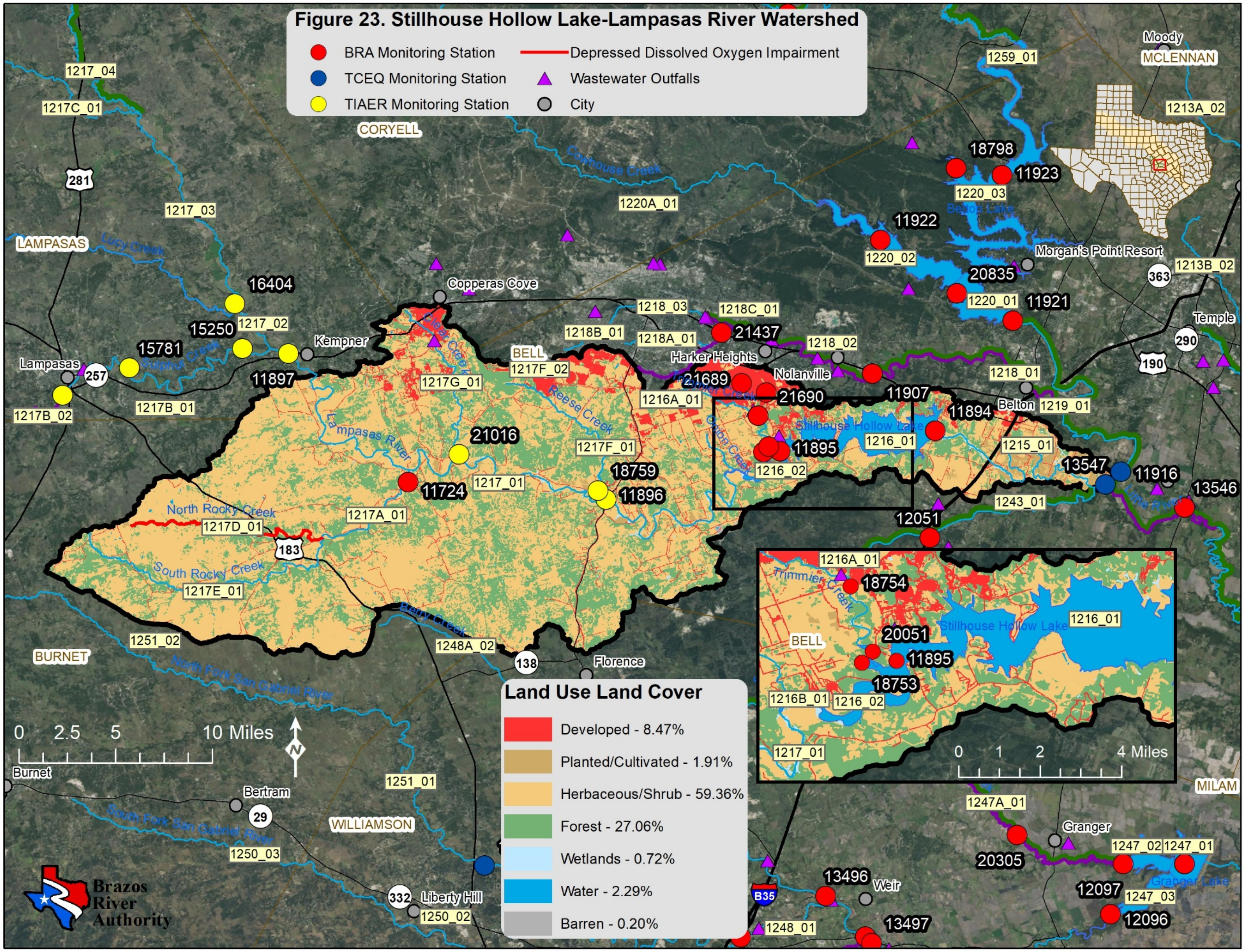


Figure 23. Stillhouse Hollow Lake-Lampasas River Watershed
BRA Monitoring Station
TCEQ Monitoring Station
TIAER Monitoring Station
Depressed Dissolved Oxygen Impairment
Wastewater Outfalls
City
Land Use Land Cover
Developed - 8.47%
Planted/Cultivated - 1.91%
Herbaceous/Shrub - 59.36%
Forest - 27.06%
Wetlands - 0.72%
Water - 2.29%
Barren - 0.20%
0 2.5 5 10 Miles
0 1 2 4 Miles
CORYELL
LAMPASAS
BELL
BURNET
WILLIAMSON
MCLENNAN
MILAM
Copperas Cove
Kempner
Lampasas
Harker Heights
Nolanville
Belton
Morgan's Point Resort
Temple
Moody
Florence
Burnet
Bertram
Liberty Hill
Granger
Weir
Stillhouse Hollow Lake
Lampasas River
North Rocky Creek
South Rocky Creek
Reese Creek
Cowhouse Creek
Trimmier Creek
Berry Creek
North Fork San Gabriel River
South Fork San Gabriel River
Lucy Creek
Sulphur Creek
16404
15250
15781
11897
21016
11724
18759
11896
21437
21689
21690
11907
11894
11895
18754
20051
18753
12051
13547
11916
13546
18798
11923
11922
20835
11921
20305
12097
12096
13496
13497
1217_04
1217C_01
1217_03
1217_02
1217B_01
1217B_02
1217G_01
1217F_02
1217F_01
1217_01
1217A_01
1217D_01
1217E_01
1251_02
1251_01
1248A_02
1250_03
1250_02
1220A_01
1218_03
1218C_01
1218B_01
1218A_01
1218_02
1218_01
1216A_01
1216_01
1216_02
1216B_01
1215_01
1219_01
1243_01
1220_03
1220_02
1220_01
1259_01
1213A_02
1213B_02
1247A_01
1247_02
1247_01
1247_03
1248_01
281
257
183
138
29
332
363
290
190
B35
Brazos River Authority

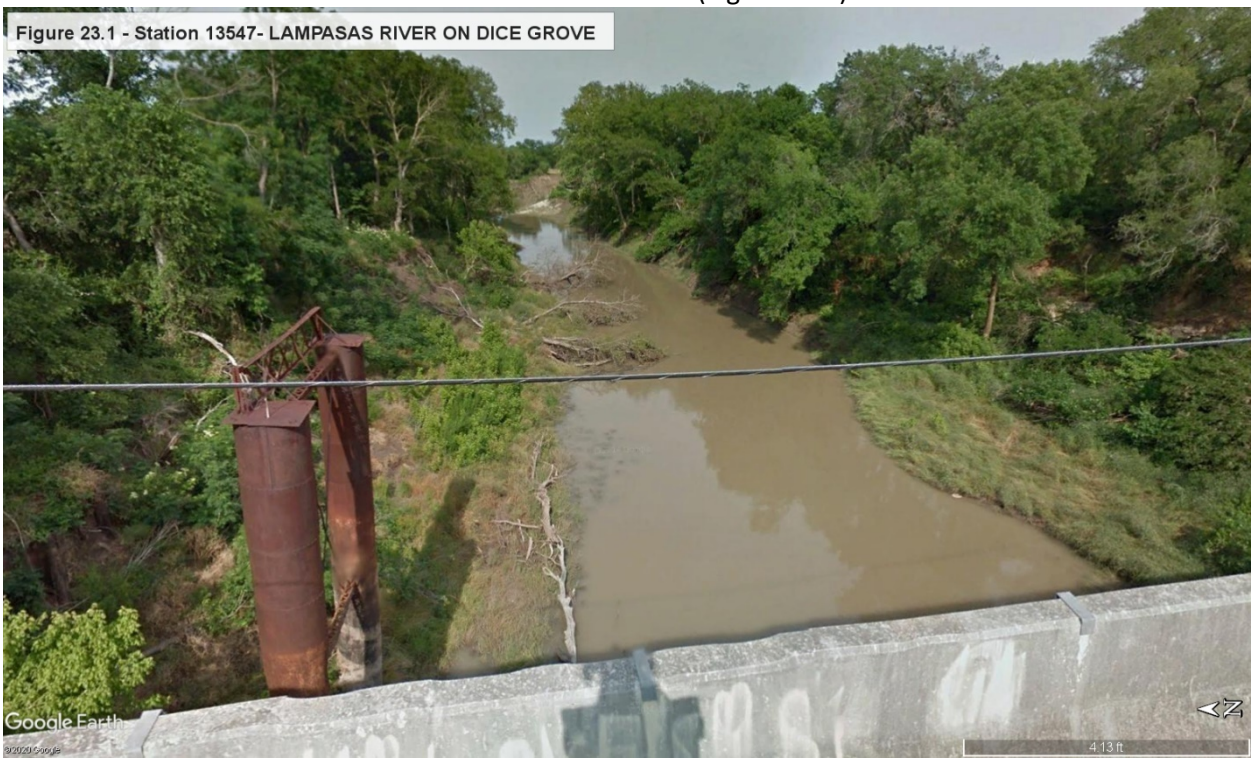
Stillhouse Hollow Lake Watershed

Watershed Description:
The Stillhouse Hollow Lake Watershed is 428 square miles in area.

Land Use Land Cover in Watershed (Figure 23):
There are no cities in the watershed. There are two wastewater outfalls in the watershed. The dominant landcover is herbaceous/shrubland (≈59%), with a moderate amount of forested land (≈27%). Stillhouse Hollow Lake is entirely within this watershed.

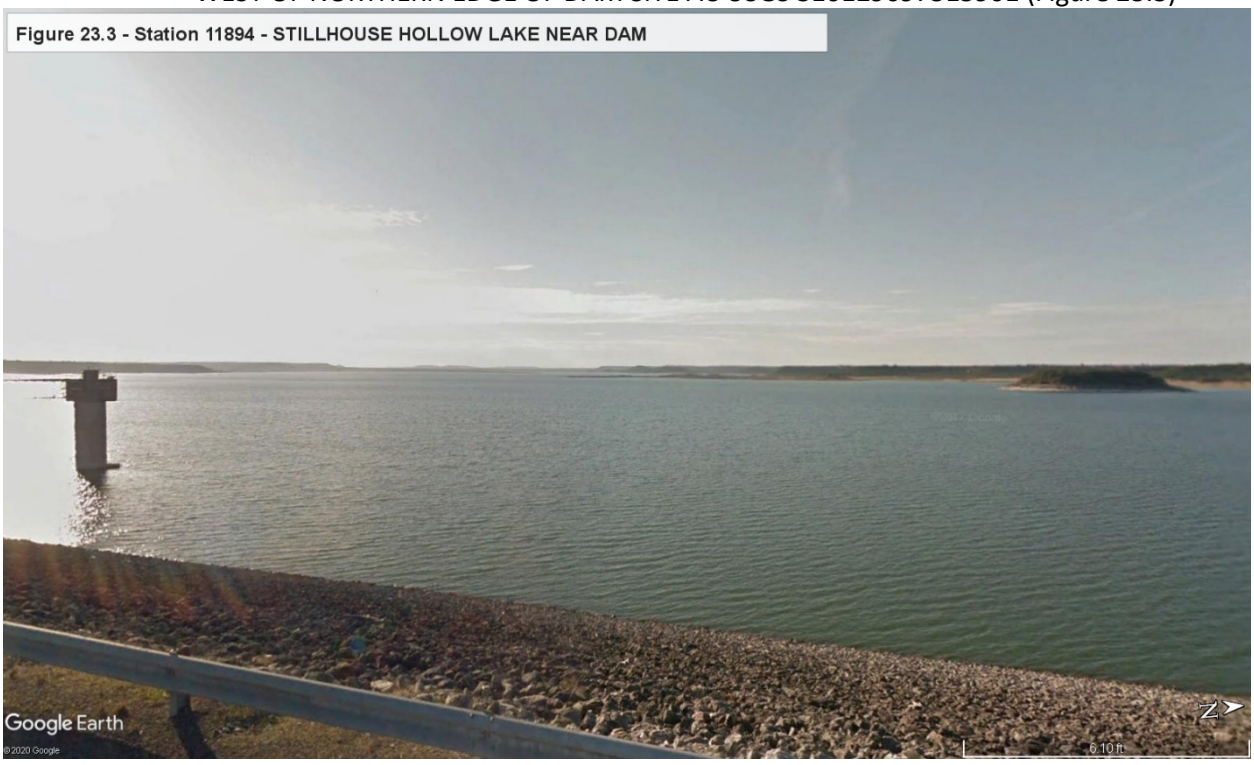
Segments in Watershed (Figure 23):

- 1215_01: Lampasas River below Stillhouse Hollow Lake
  Monitoring Station: 13547 - LAMPASAS RIVER IMMEDIATELY DOWNSTREAM OF DICE GROVE RD SOUTHWEST OF FORT GRIFFIN (Figure 23.1)



- 1216_01: Stillhouse Hollow Lake, main body of lake
  Monitoring Stations:
  18753 - STILLHOUSE HOLLOW LAKE IN TRIMMIER CREEK COVE NEAR CONFLUENCE OF LITTLE TRIMMIER CREEK 310 METERS S AND 462 METERS EAST OF SCHRADER DR END (Figure 23.2)
  11895 - STILLHOUSE HOLLOW LAKE MID-LAKE AT LAMPASAS RIVER ARM APPROXIMATELY 60 METERS UPSTREAM OF STILLHOUSE HOLLOW RD/FM 3481 (Figure 23.2)

11894 - STILLHOUSE HOLLOW LAKE NEAR DAM 441 METERS SOUTH AND 302 METERS WEST OF NORTHERN EDGE OF DAM SITE AC USGS 310129097315901 (Figure 23.3)



- 1216_02: Stillhouse Hollow Lake, riverine portion of reservoir

- 1216_SA1: Stillhouse Hollow Lake, Branch Cove associated with main body of lake
  Monitoring Station: 20051 - STILLHOUSE HOLLOW LAKE IN PLEASANT BRANCH COVE 4.28 KILOMETERS DOWNSTREAM OF CHAPARRAL RD CROSSING (Figure 23.2)
- 1216A_01: Trimmier Creek
  Monitoring Station: 18754 - TRIMMIER CREEK IMMEDIATELY UPSTREAM OF CHAPARRAL RD WEST OF FM 3481

Figure 23.4 – Station 18753 - TRIMMIER CREEK AT CHAPARRAL RD

- 1216B_01: Onion Creek
- 1217_01: Lampasas River above Stillhouse Hollow Lake, from confluence with Rock Creek in Bell County upstream to confluence with Mesquite Creek west of Kempner in Lampasas County
  Monitoring Station: 11896 - LAMPASAS RIVER AT SH 195 APPROXIMATELY 2.1 KILOMETERS DOWNSTREAM OF REESE CREEK CONFLUENCE SOUTH OF KILLEEN (Figure 23.5)

- 1217A_01: Rocky Creek

  Monitoring Station: 11724 - ROCKY CREEK AT FM 963 APPROXIMATELY 1.26 KILOMETERS UPSTREAM OF LAMPASAS RIVER NEAR OAKALLA (Figure 23.6)

- 1217D_01: North Rocky Creek (Figure 23.7)

- 1217E_01: South Rocky Creek
- 1217F_01: Reese Creek, from confluence with Lampasas River above Stillhouse Hollow Lake upstream to confluence with unnamed tributary (NHD reach code 12070203002555)

  Monitoring Station: 18759 - REESE CREEK 33 METERS DOWNSTREAM OF FM 2670 APPROXIMATELY 625 METERS UPSTREAM OF CONFLUENCE WITH LAMPASAS RIVER (Figure 23.8)

- 1217F_02: Reese Creek (unclassified water body), from confluence with unnamed tributary (NHD reach code 12070203002555) upstream to headwaters in Bell County
- 1217G_01: Clear Creek

    Monitoring Station: 21016 - CLEAR CREEK AT OAKALLA RD 3.53 KILOMETERS EAST AND 2.2 KILOMETERS NORTH OF OAKALLA (Figure 23.9)

- Pleasant Branch

    Monitoring Station: 21689 - PLEASANT BRANCH AT FOOTBRIDGE IN PURSER PARK APPROX 63 METERS DOWNSTREAM OF MOUNTAIN LION RD CROSSING IN HARKER HEIGHTS (Figure 23.10)

Figure 23.10 – Station 21689 - PLEASANT BRANCH IN PURSER PARK

- Unnamed Tributary to Trimmier Creek
  Monitoring Station: 21690 - UNNAMED TRIBUTARY OF TRIMMIER CREEK APPROX 60 METERS EAST OF PROSPECTOR TRAIL AND MUSTANG TRAIL INTERSECTION IN HARKER HEIGHTS (Figure 23.11)


Figure 23.11 – Station 21690 - UNNAMED TRIBUTARY OF TRIMMIER CREEK

Impairments in Watershed Description (Figure 23):

- 1217D_01: Aquatic Life Use—Depressed Dissolved Oxygen

Possible Contributions if Impaired:

Point Sources: There are no know point sources.

Non-point sources: There are no known non-point sources.

Potential non-State Agency Stakeholders:

- Fort Hood Military Base
- Burnet County
- Lampasas County
- Bell County
- Coryell County
- Williamson County
- Any marinas or other businesses on or that serve Stillhouse Hollow Reservoir

Actions taken if impaired:

- 1217D_01 was approved by the EPA in 2011 to be classified as having an intermediate level of aquatic life use.

Recommendations if impaired:

- More current data should be collected in 1217D_01 to be used in assessing the segment using the newly approved criteria. However, it has proven difficult to obtain the required dissolved oxygen data due to the frequent low water levels inherent to this segment.

Brazos River Basin Highlights Report

2020

Brazos River Authority

THE TEXAS CLEAN RIVERS PROGRAM

TCEQ

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under the authorization of the Texas Clean Rivers Act.