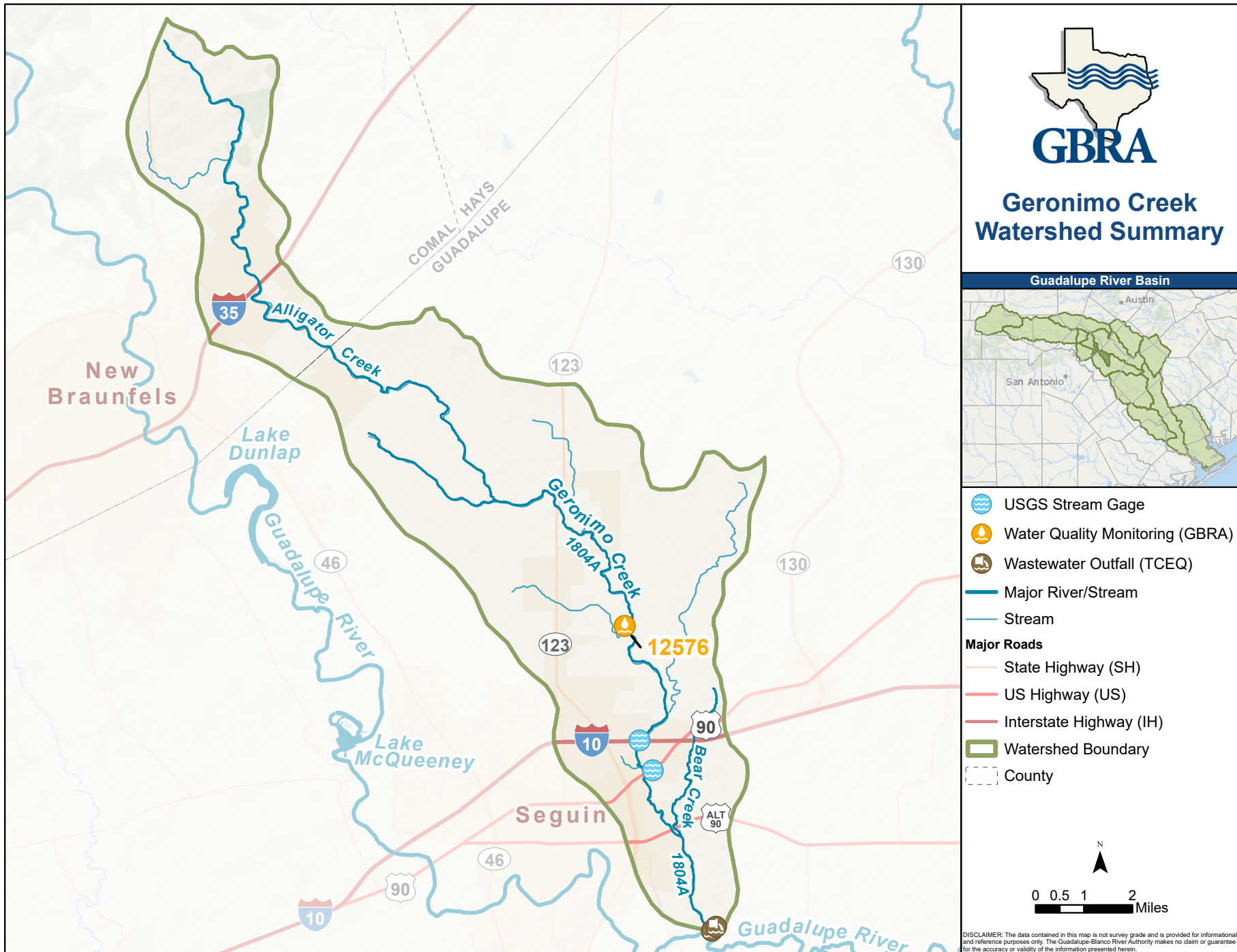


GERONIMO CREEK



Segments

Segment 1804A - Geronimo Creek

Segment 1804C - Alligator Creek

Segment 1804D - Bear Creek

Segment Summary

Geronimo Creek is a 17-mile-long tributary of the Guadalupe River located almost entirely within the extra-territorial jurisdictions (ETJ) of the cities of New Braunfels and Seguin. The watershed is roughly 70-square-miles and flows through Comal and Guadalupe counties. Geronimo Creek is a perennial stream with flow sustained by two major springs: Timmerman Springs and an unnamed spring issuing from

the Leona Aquifer through alluvium substrate. Geronimo Creek watershed lies within the IH-35 corridor and is experiencing a major population boom. For several years, the city of New Braunfels has been among the fastest growing cities in the nation, which creates concerns for increased nonpoint source pollution and challenges in providing water to an increasing population.



GBRA Water Quality Team Conducting Flow Measurement on Geronimo Creek

Geronimo Creek was first added to the 303(d) List of Impaired Water Bodies for bacteria in 2006. In 2009, the TSSWCB, GBRA, and Texas A&M AgriLife Extension began developing a Watershed Protection Plan (WPP) for the watershed; this plan was accepted by EPA in 2012. One station (12576) is monitored in Geronimo Creek under the Clean Rivers Program. Extensive additional monitoring is conducted under the Geronimo and Alligator Creeks Watershed Protection Plan, including seven routine sites, four weather targeted sites, one spring, and two wells. Alligator Creek (1804C) and Bear Creek (1804D) are not monitored under the Clean Rivers Program but are monitored under the WPP monitoring program. More information on the WPP and water quality data collected under that program is available at <http://www.geronimocreek.org/>.

Geronimo Creek remains impaired for bacteria, and has a concern for nitrate nitrogen. Additionally, Bear Creek (1804D) also has a concern for bacteria. In 2015, a study was conducted by the United States Geological Survey to characterize the sources of elevated nitrate nitrogen concentrations on Geronimo Creek and the underlying Leona Aquifer. The report stated that the sources of the nitrates in the groundwater and springs are most likely from diffuse sources that occur in conjunction with the mixing of nitrate from fertilizer applications and septic systems. Best management practices, including nutrient management training, identifying and decommissioning failing septic systems, and storm water management were recommended under the WPP.

Station ID	Dissolved Oxygen	Biologicals	Bacteria	Temperature	Nutrients	Chlorophyll a
12576	M	M	I	M	C	M

M - Meets water quality criteria

C - Concern for water quality criteria

I - Impaired for water quality criteria

Table 12: Summary of the 2022 Texas Integrated Report / Segment 1804A

No significant increasing or decreasing trends were found in data assessed at station 12576. Results from bacteria grab samples remain consistently near or above the screening criteria of 126 MPN (Figure 27). The 2022 Texas Integrated Report lists a bacteria geometric mean of 214.21 MPN for Geronimo Creek. In 2019, a bacterial source tracking study was completed on Geronimo Creek. Data were collected at two sites: Geronimo Creek at Haberle Road (12576) and Geronimo Creek at Seguin Outdoor Learning Center (21261), which is a site monitored under the WPP. Results from the study indicated that the largest contributors of bacteria at these sites were avian and non-avian wildlife, followed by livestock. Humans had a relatively low impact, accounting for only 2% and 3% of bacteria detected at the two stations, respectively. Future best management practices should focus on runoff reduction as well as wildlife and livestock management to reduce bacteria loading.

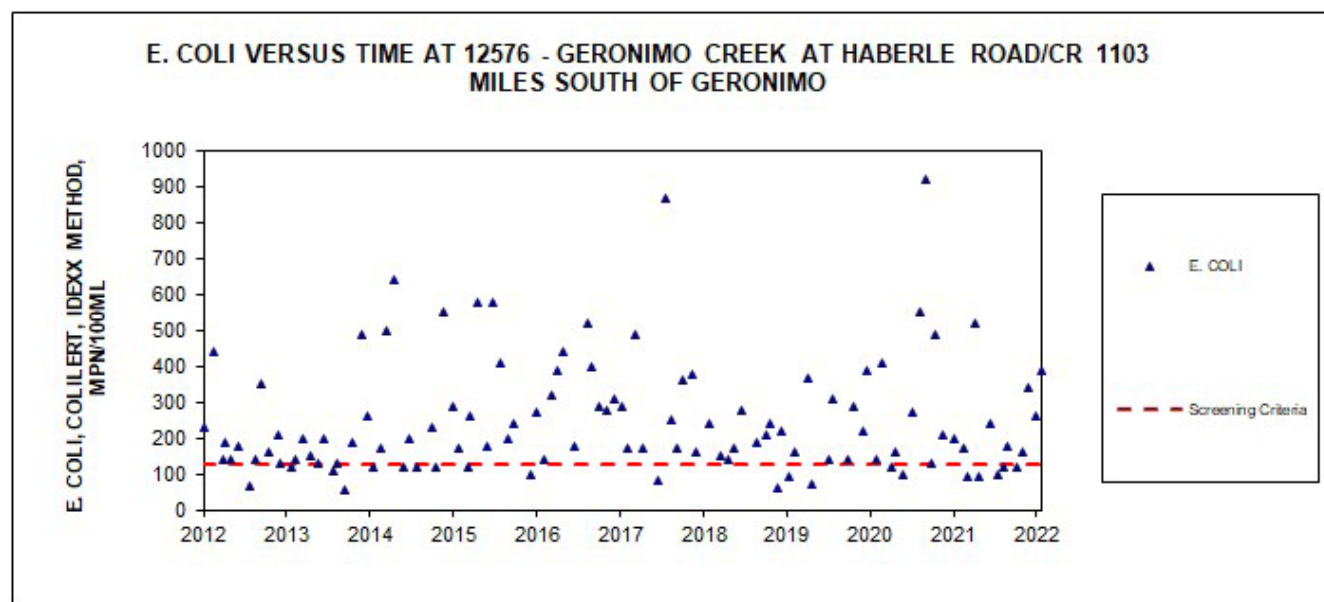


Figure 27: E.coli at Station 12576