

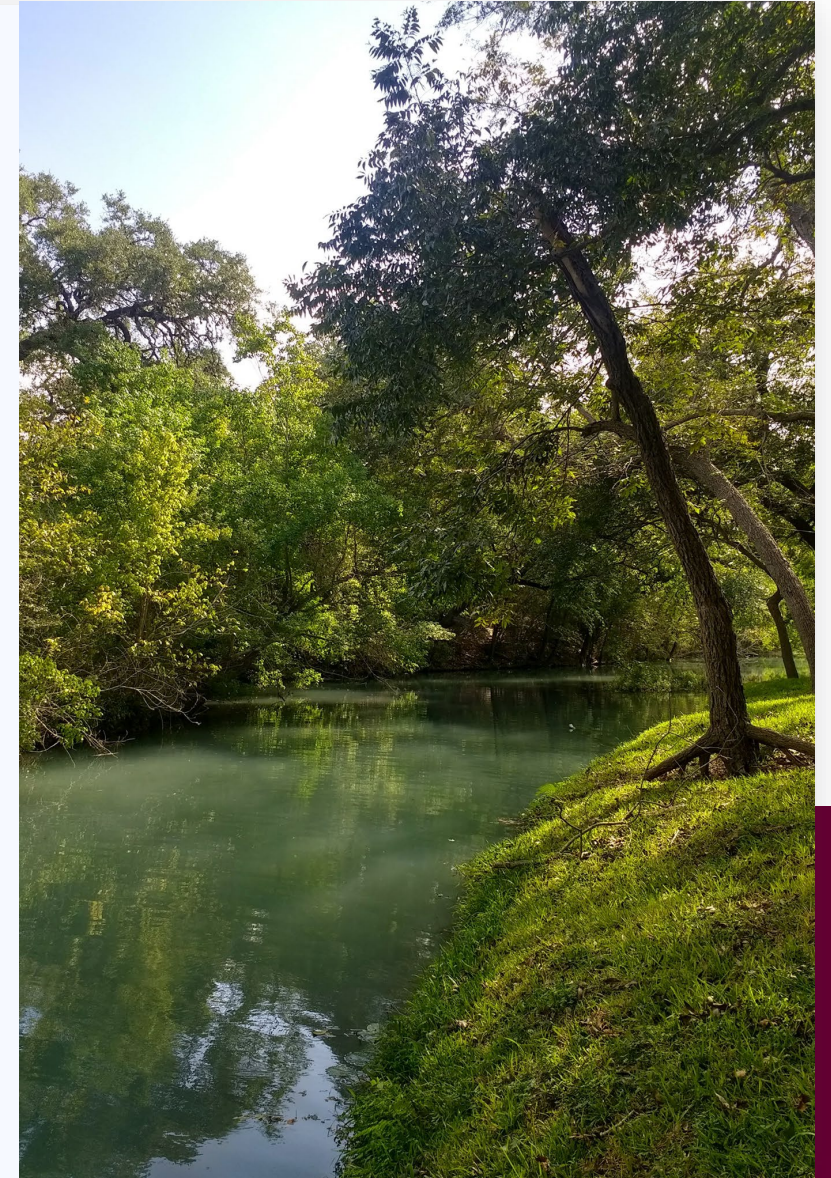
# GERONIMO AND ALLIGATOR CREEKS WATERSHED PROTECTION PLAN

## Implementation Updates

Evgenia Spears, Ph.D.

Watershed Coordinator

Texas A&M AgriLife Extension Service



# WATERSHED HIGHLIGHTS: POPULATION GROWTH

## Comal County (since 2010)

- Population increased by 49%
- New Braunfels is the third fastest-growing city in the nation

## Guadalupe County (since 2010)

- Population increased by 31%



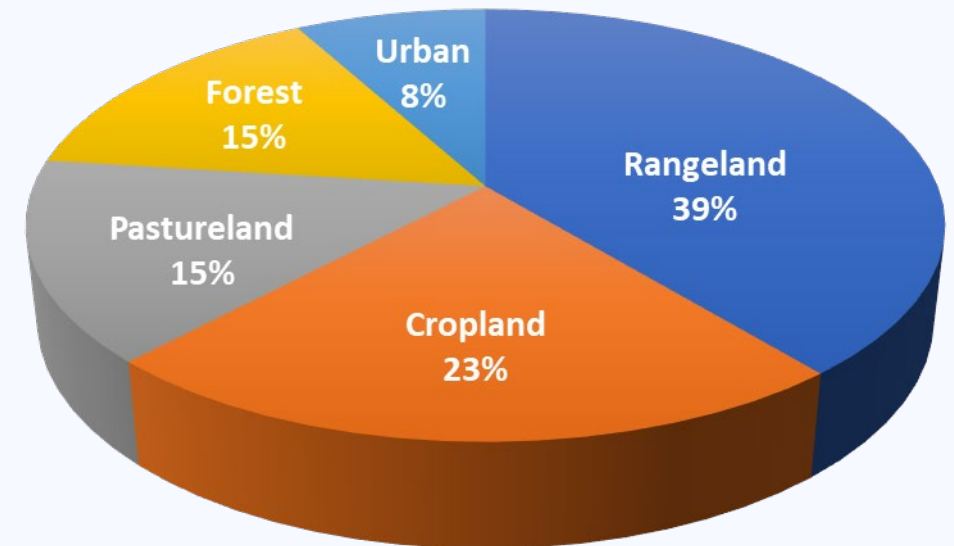
## WATERSHED HIGHLIGHTS: LAND USE

### Comal County (since 2012)

- Number of farms increased by 17%
- Avg. farm size - 216 ac – decreased by 16%

### Guadalupe County (since 2012)

- Number of farms increased by 13%
- Avg. farm size - 141 ac – decreased by 18%



Total area: 70 square miles

# WATER QUALITY IMPAIRMENTS

- Elevated *E. coli* bacteria
- Concern for nitrate-nitrogen concentrations

Agriculture



Failing septic systems



Wildlife



## POLLUTION SOURCES IN GERONIMO AND ALLIGATOR CREEKS

Urban runoff



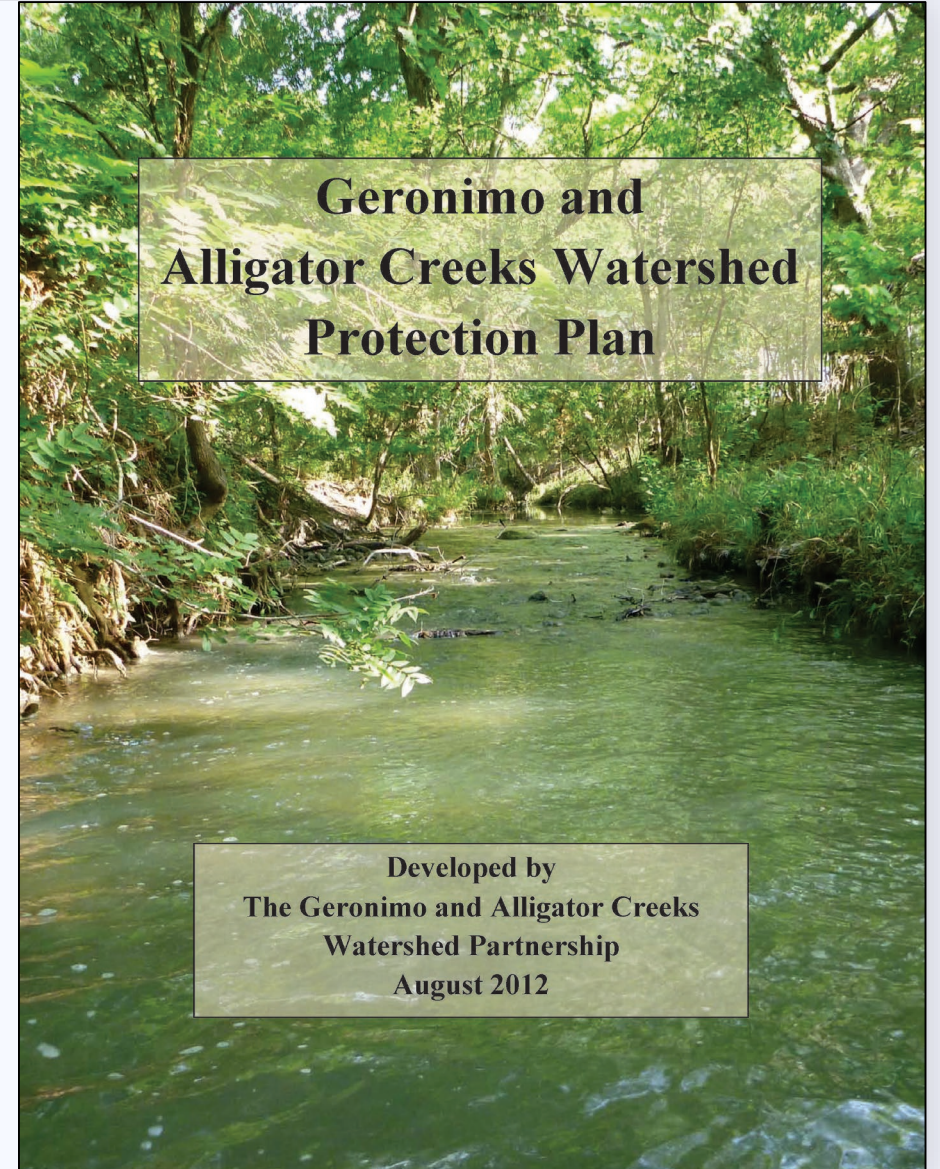
Pet waste



# GERONIMO AND ALLIGATOR CREEKS WPP

In place since 2012 (10 years!)

- Public outreach and education
- Water quality monitoring
- Bacterial source tracking analysis
- Collaboration with local units of government, ISDs, and organizations
- Water Quality Management Plans
- Stakeholder survey



## **Geronimo and Alligator Creeks Watershed Protection Plan**

**Developed by  
The Geronimo and Alligator Creeks  
Watershed Partnership  
August 2012**

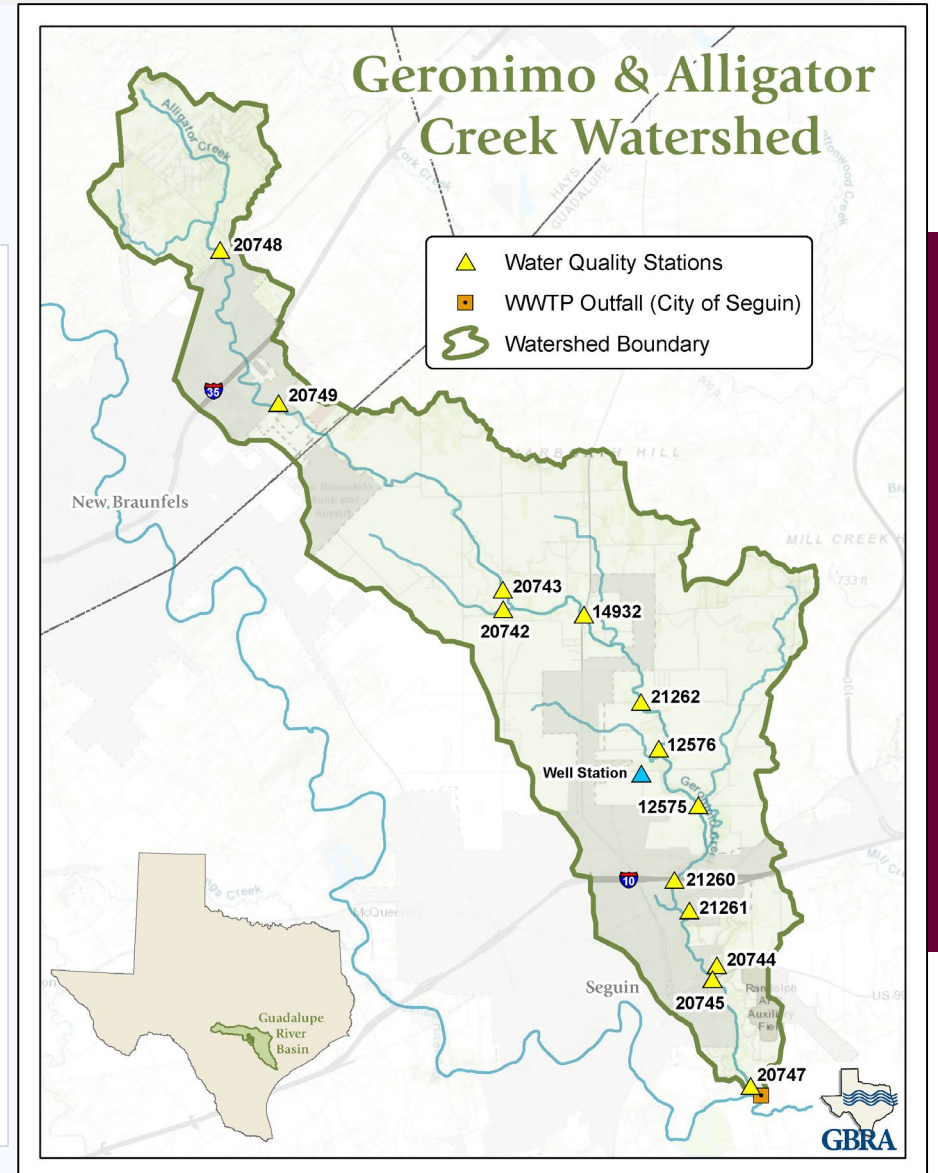
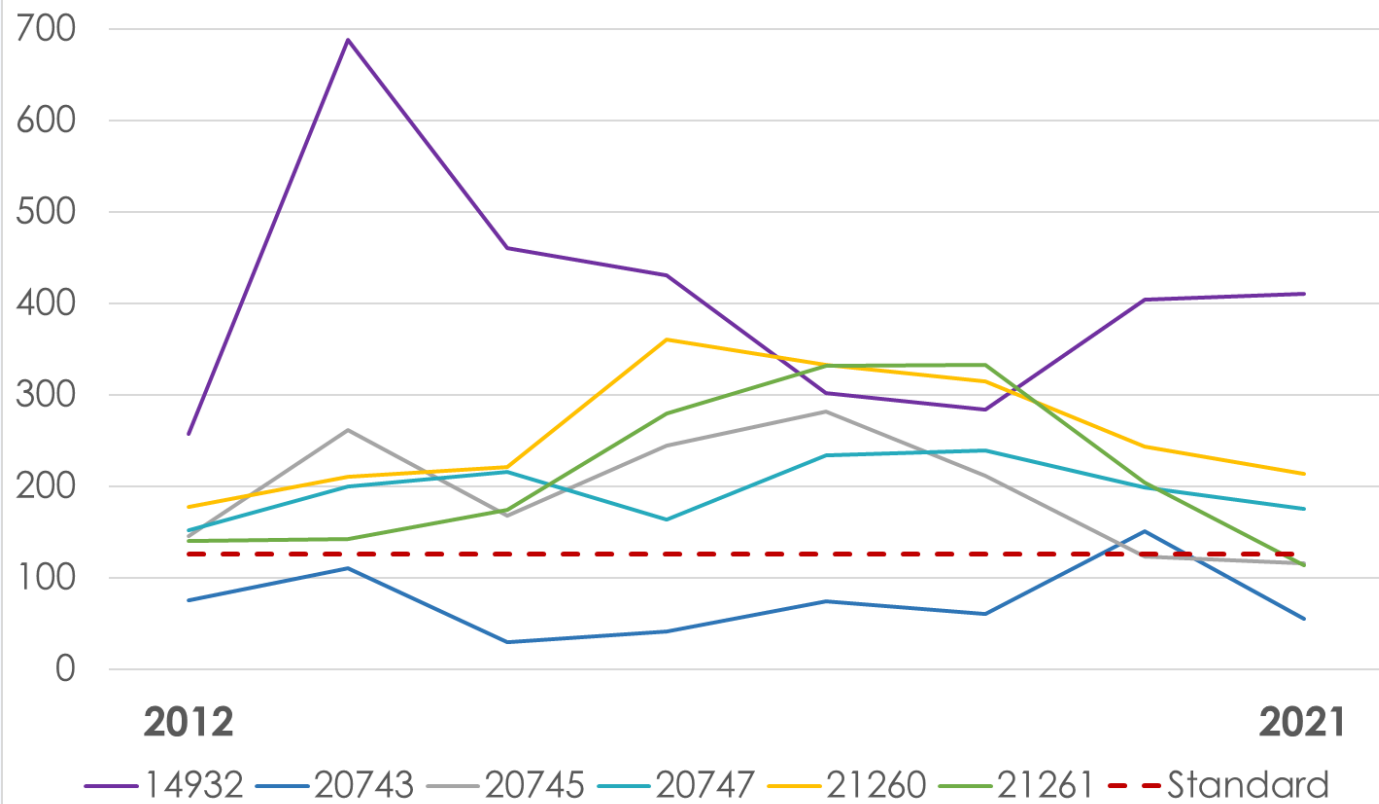
# PUBLIC OUTREACH AND EDUCATION

- Educational programs
  - Healthy Lawns Healthy Waters
  - Texas Well Owner Network,
  - Texas Watershed Steward, etc.
- Watershed cleanup events (spring and fall)
- Newsletters and social media

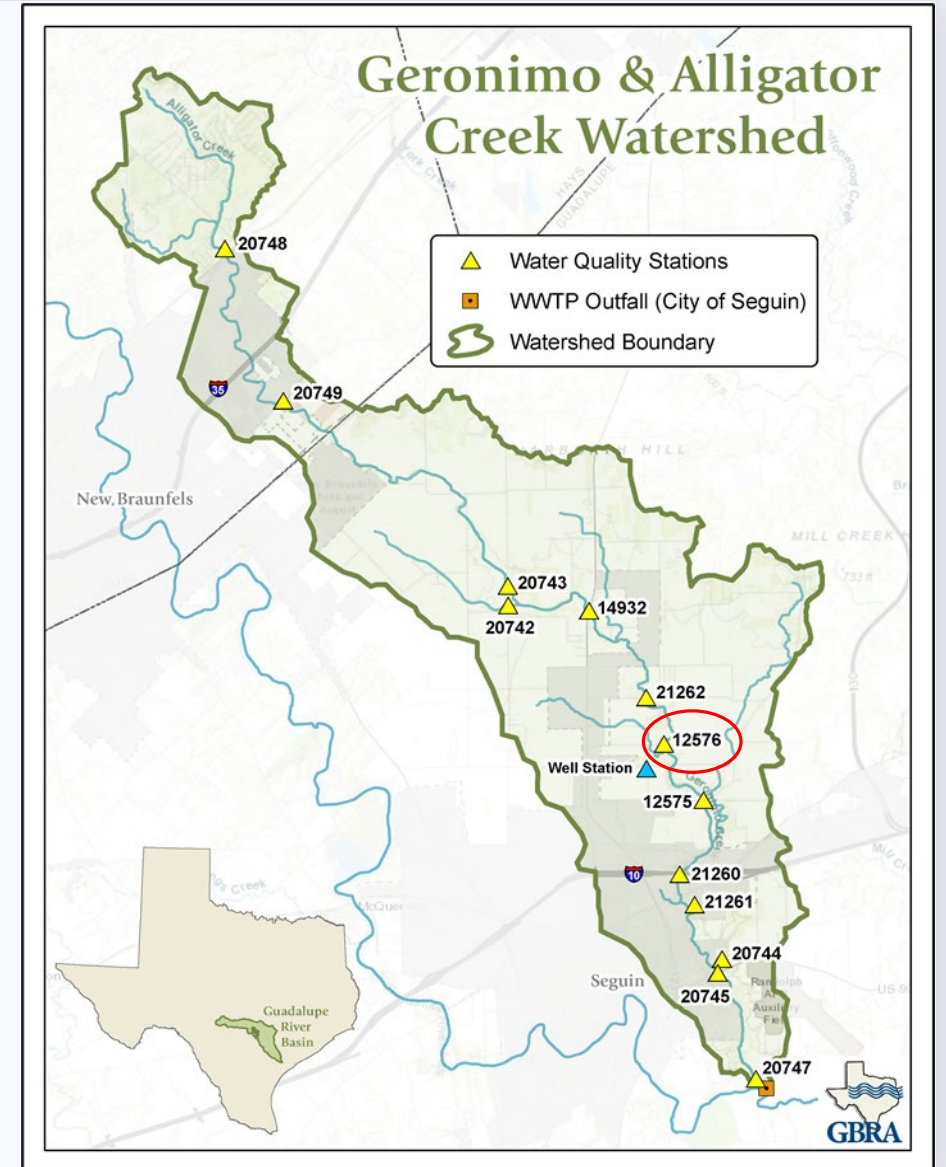
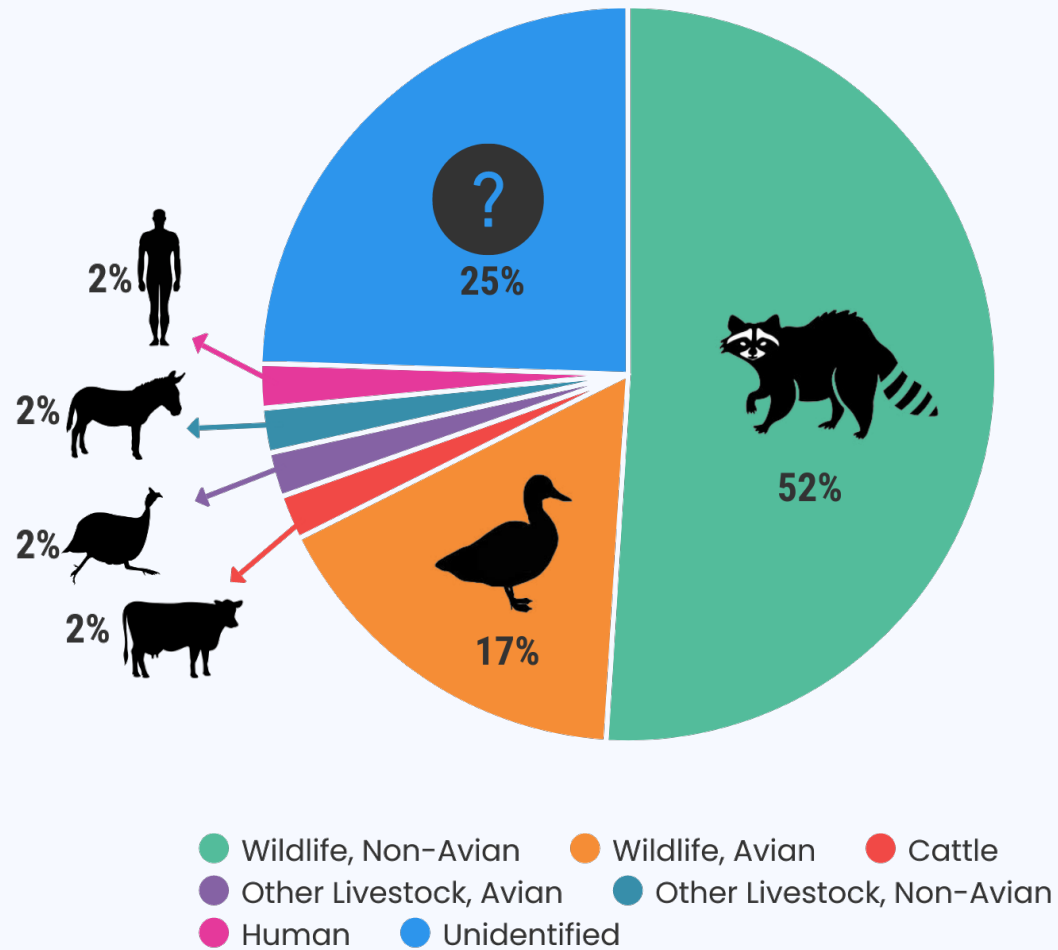


# WATER QUALITY MONITORING

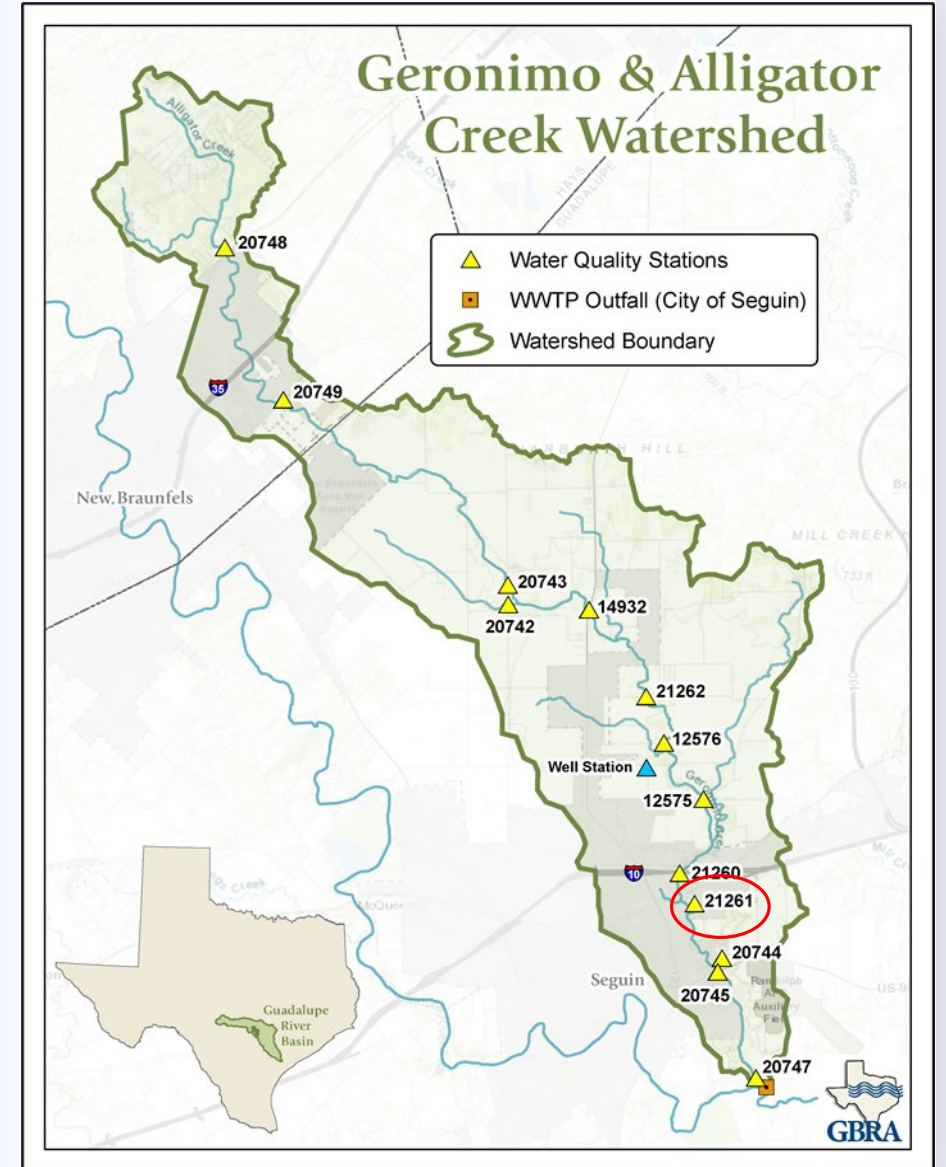
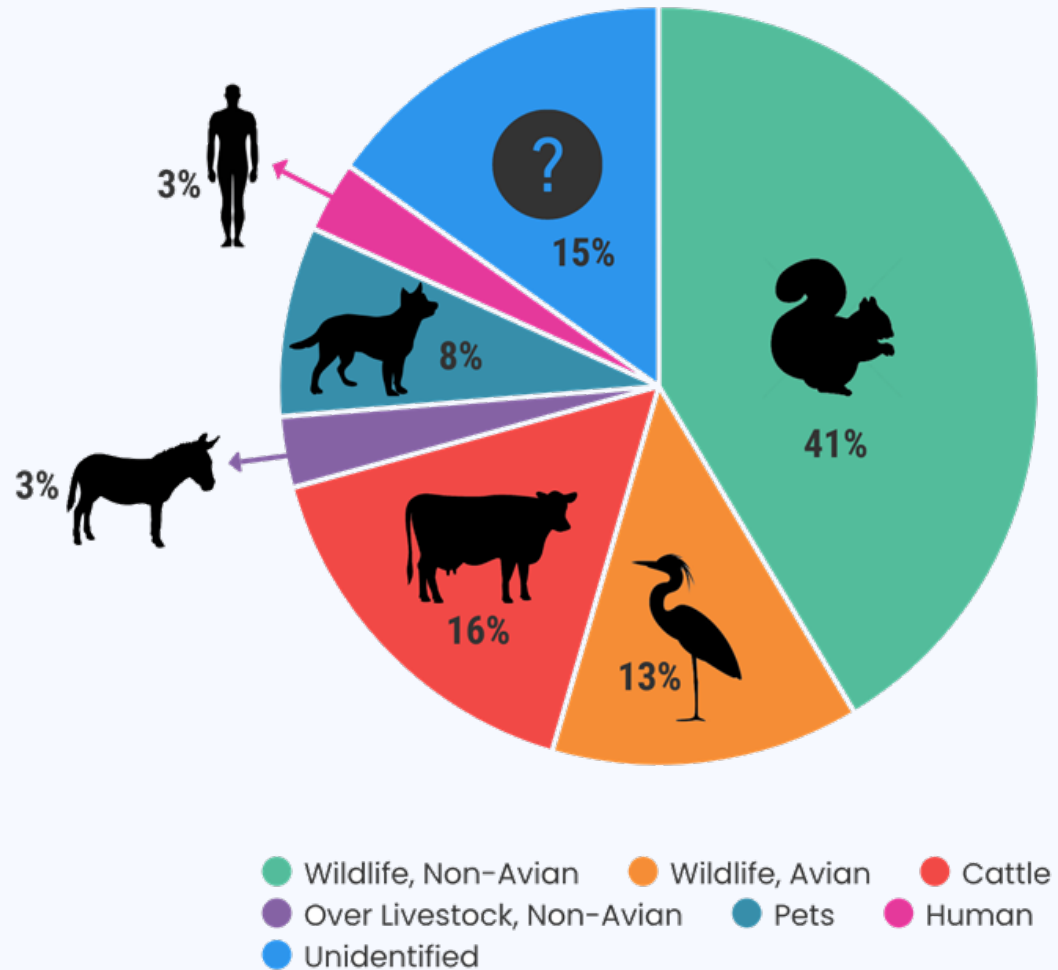
*E. coli* trends, 2012 - 2021



# BACTERIAL SOURCE TRACKING



# BACTERIAL SOURCE TRACKING



# CLEANUP EVENT

- Spring and Fall Cleanup Event
- Since 2013, over 1,200 volunteers removed over 20,000 lbs of trash

**2021**



- Spring: 30 volunteers, 1,880 lbs trash
- Fall: 25 volunteers, 1870 lbs trash

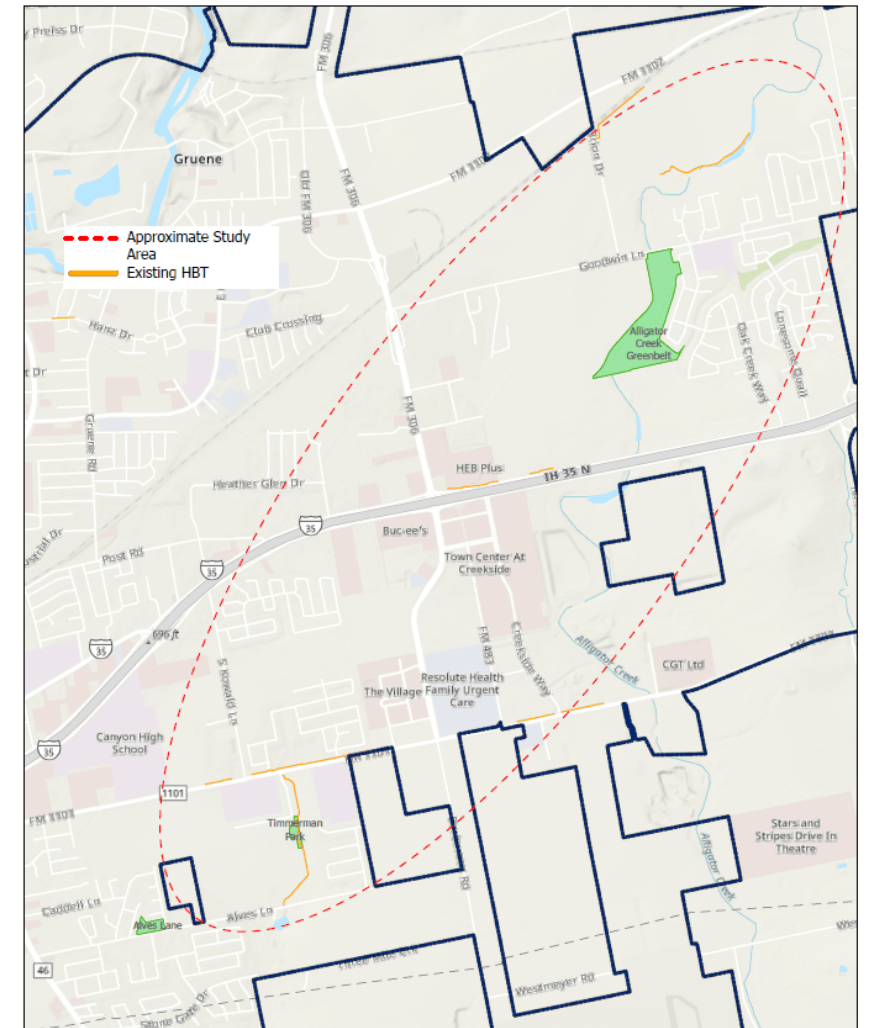
**2022**

- April 30, 9 a.m. – 12 p.m.



# ALLIGATOR CREEK TRAIL PARK

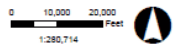
- Project of the City of New Braunfels
- Linear park to provide recreational opportunities and green space connectivity
- Featuring low impact development structures and signage to increase awareness of water quality



## Proposed Alligator Creek Linear Park & Trail

Document Path:  
\\pcp-globel\GIS\Dept\Departments\Plan\HST Plan Maps\4\update\HST Plan Maps\4\update.aprx

Source: City of New Braunfels GIS  
Date: 9/15/2021



# WATER QUALITY MANAGEMENT PLANS

<b>Total applications</b>		<b>49</b>
<b>Plans written</b>		<b>27</b>
<b>Plans signed</b>		<b>22</b>
<b>Total acres</b>		<b>3,860.9</b>
	Cropland	1,177.3
	Pastureland	1,327.6
	Rangeland	1,456



Photo credit: Cris Perez, Comal-Guadalupe SWCD Field Technician

# STAKEHOLDER SURVEY

- To improve outreach and education
- To learn more about people's perceptions of water quality, programs of interest, information sourcing, etc.
- Administered since December 2021, in-person and online (via Qualtrics)



## Stakeholder Survey

The purpose of this survey is to better understand Texas residents' perceptions about the state's water resources. Your participation is voluntary and completely anonymous. Please read the following questions and mark the answer that best reflects your opinion. Upon completion, please return this questionnaire to the watershed coordinator. We greatly appreciate your input!

### 1. How would you describe the quality of surface water where you live?

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor
- ☐ Don't know

**Surface water** is any body of water above ground including reservoirs, lakes, rivers, streams, creeks, ponds, and wetlands.

### 2. In your opinion, how much do the pollutants listed below affect the surface water quality where you live?

	Definitely not an issue	Possibly an issue	Definitely an issue	Don't know
Pesticides & fertilizers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Failing septic systems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Pet waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Feral hogs & deer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Livestock animal waste	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Litter	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Industrial waste discharge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Land development (e.g., construction of roads, houses, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

List any other concerns that you have about the water surface quality where you live?

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## STAKEHOLDER SURVEY RESULTS

- 35 responses (Guadalupe, Comal, Hays, Kendall, Wilson, Williamson, Travis, Caldwell, and Bexar)
- Males (59%), females (41%)
- Age: 30-59, 42%
- Education: Bachelor's degree, 46%
- Primary residence: Rural area, not a farm/ranch, 34%
- High concern water quality, 80%
- Most know what a watershed is (86%) and heard of G&A Partnership (58%)

# STAKEHOLDER SURVEY RESULTS

## Perceptions of water quality:

- Fair, 31%
- Good, 29%
- Excellent, 14%

## Top perceived pollutants:

- Development, 74%
- Litter, 71%
- Pet waste, 51%

## Programs of interest:

- Invasive species management, 13%
- Home and garden landscaping, 12%
- Stormwater runoff management, 11%



## UPCOMING PROGRAMS

- 9<sup>th</sup> Annual Geronimo and Alligator Creeks Spring Cleanup Event, April 30
- Texas Watershed Steward, May 25
- Lone Star Healthy Streams, June 1 (multi-watershed event)
- Fall Cleanup Event, TBD





## GERONIMO & ALLIGATOR WATERSHED PARTNERSHIP

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Texas A&M AgriLife Extension Service

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# THANK YOU!



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