



# Dry Comal Creek and Comal River Watershed Protection Plan Implementation Update

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City of New Braunfels

July 29, 2021

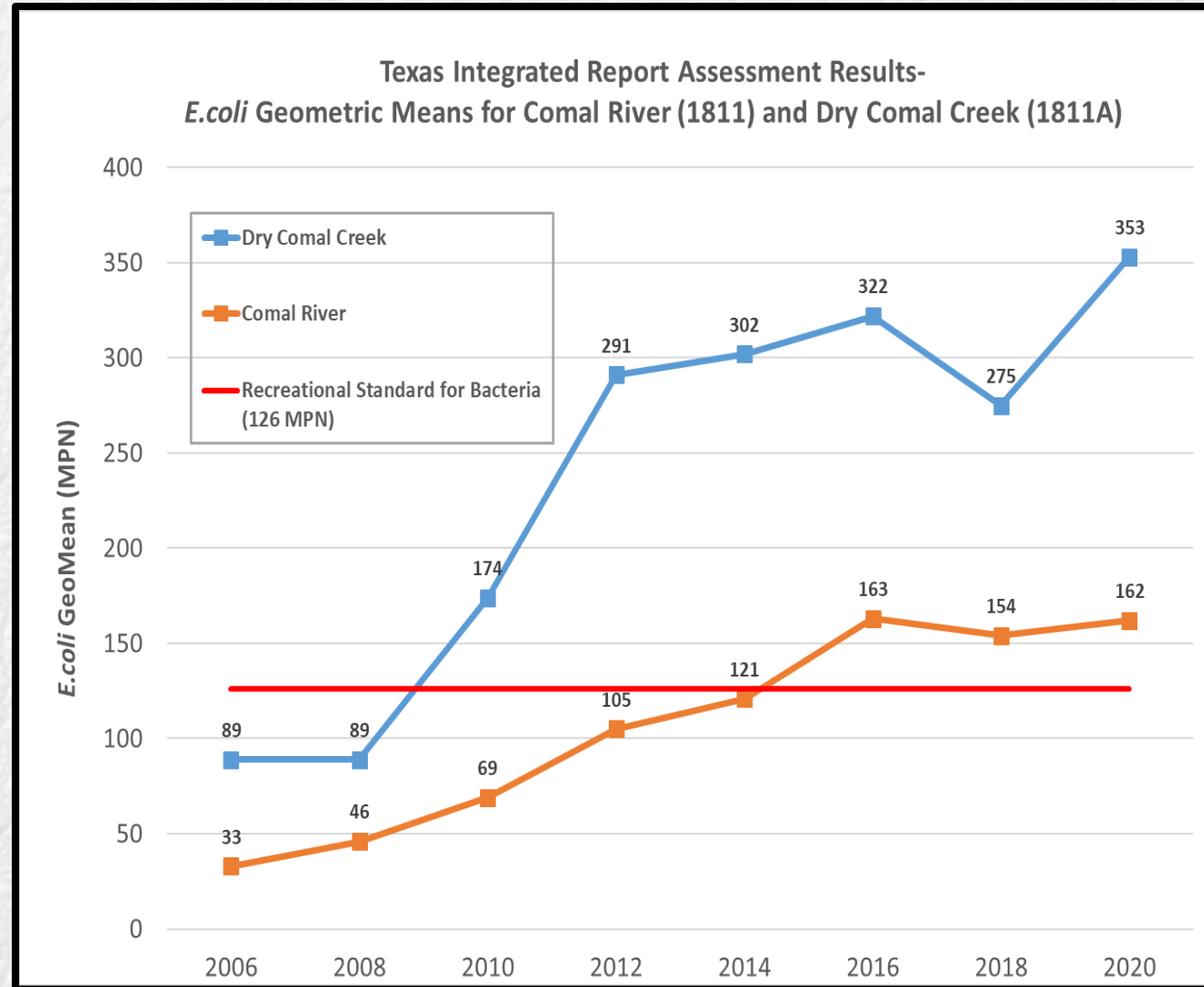


# Water Quality Concerns

**Dry Comal Creek:** initially placed on the 303(d) list for bacteria in 2010.

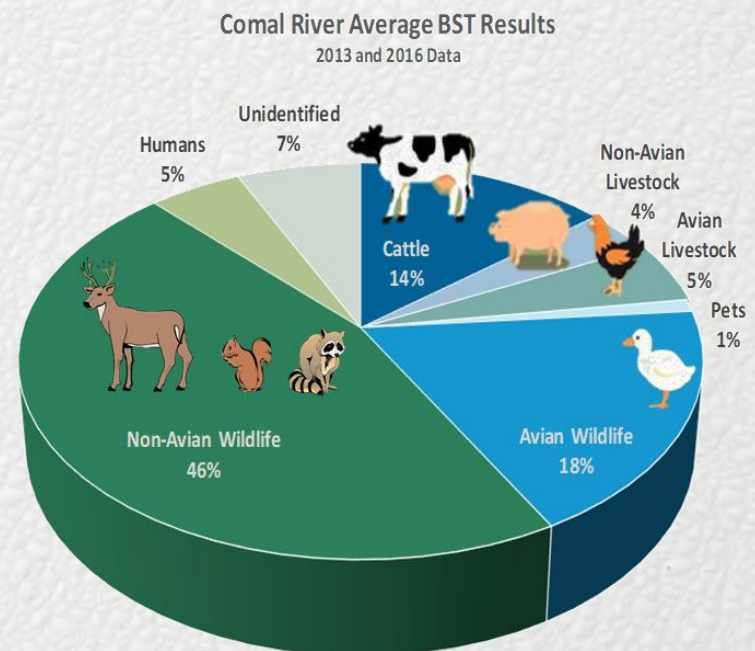
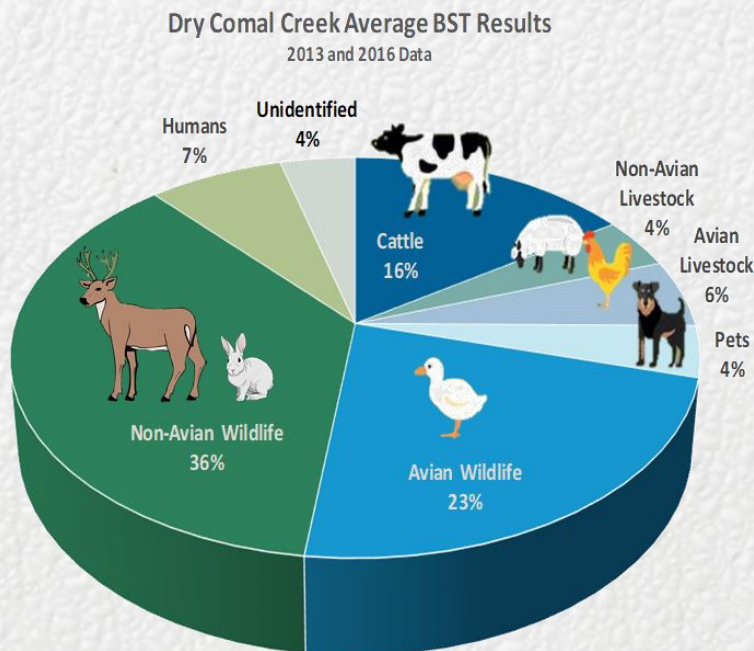
**Comal River:** initially placed on the 303(d) list for bacteria in 2016.

**Note:** Each data point represents the GeoMean of approx. 84 samples. For example, the 2020 assessment data points include 84 samples collected 2011-2018.



# Water Quality Concerns

- Bacteria Source Tracking (BST) analysis was conducted in 2013 & 2016 by Texas A&M lab to identify sources of bacteria in creek/ river
- Approx. 60% of the bacteria found in Comal River & Dry Comal Creek from wildlife
- The Watershed Protection Plan (WPP) for the Dry Comal Creek and Comal River includes wildlife management measures to address bacteria loading. WPP accepted by TCEQ and EPA in September 2018. Funding also provided by TCEQ/ EPA to support WPP implementation.





# CoNB Wildlife Feeding Ordinance



- In Sept. 2018, CoNB City Council passed and approved an ordinance prohibiting the feeding of wildlife within the city limits (Ord No. 2018-58)
  - The ordinance became effective March 10, 2019
  - The ordinance prohibits the feeding of all wildlife on both public and private property
  - 1<sup>st</sup> offense: warning, 2<sup>nd</sup> offense: fines \$75-500
  - Exceptions: bird feeders hung at least 5ft above ground & Hunting Land Permit holders

# Feeding Ordinance Signage





# Non-Native Waterfowl Mgmt.

Since early 2019:

- 193 non-native waterfowl have been trapped and removed from Landa Park
- 113 non-native waterfowl eggs have coated with vegetable oil





# Pet Waste Management

- Installed educational signage at Puppy Playland dog park in NB
- Purchased and provided pet waste bag dispenser stations for HOAs, City parks and apartment complexes – 40 units installed
- Portable pet waste bag dispensers





# Outreach and Education

- Resume in-person youth presentations in Fall 2021
- Wildlife Mgmt. Workshop – Late 2021
- Texas Riparian & Stream Ecosystem Training – Nov. 2021
- Postcards, Door Hangers
- Annual Summary, Infographic - Year 3 available early 2022





# Outreach and Education

## WPP Educational Video

- Production finalized in August 2020
- Video shown at two local movie theaters prior to each movie for 20 weeks, CoNB WPP website links were included in theater email marketing campaigns
- Currently shown on New Braunfels local access channel, CoNB facilities with video screens, CoNB WPP website





# Outreach and Education

## Watershed Signage

- Developed watershed signage to be installed at key locations within the Dry Comal Creek and Comal River Watersheds
- Signage to be installed in Fall 2021





## WPP Educational Games

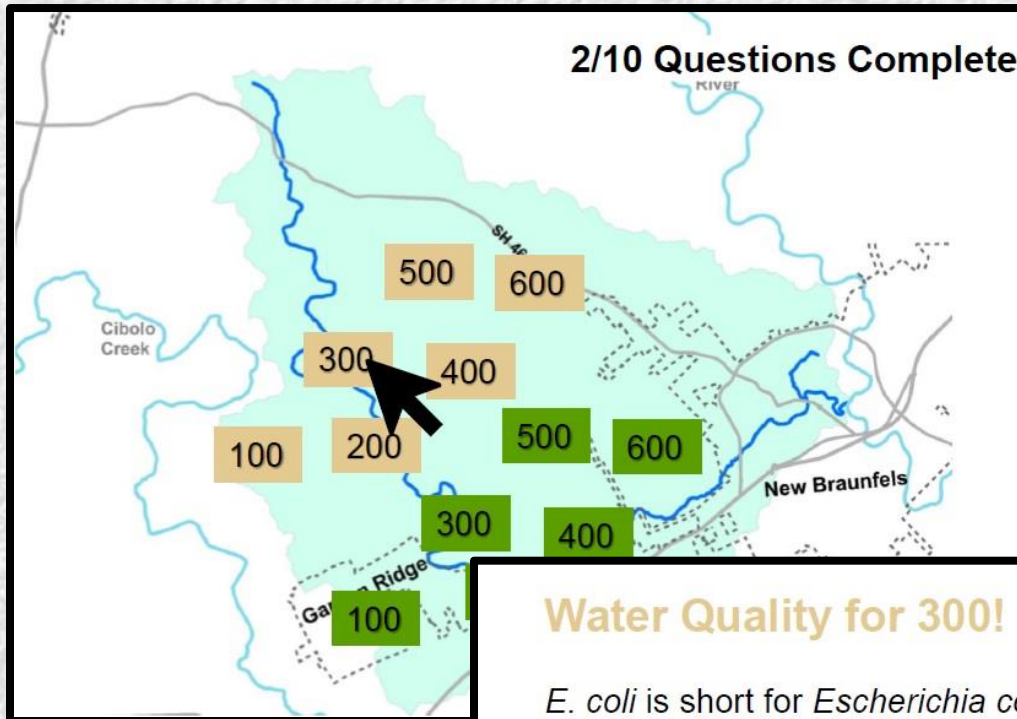
- Production has begun - Summer 2021
- Browser-based games that can be utilized in conjunction with any watershed programming
- Will be available on the CoNB WPP website
- Two games:
  - Jeopardy-style quiz game
  - Watershed Hero – Scenario evaluation game





# Outreach and Education

## Jeopardy-style quiz game



### Water Quality for 300!

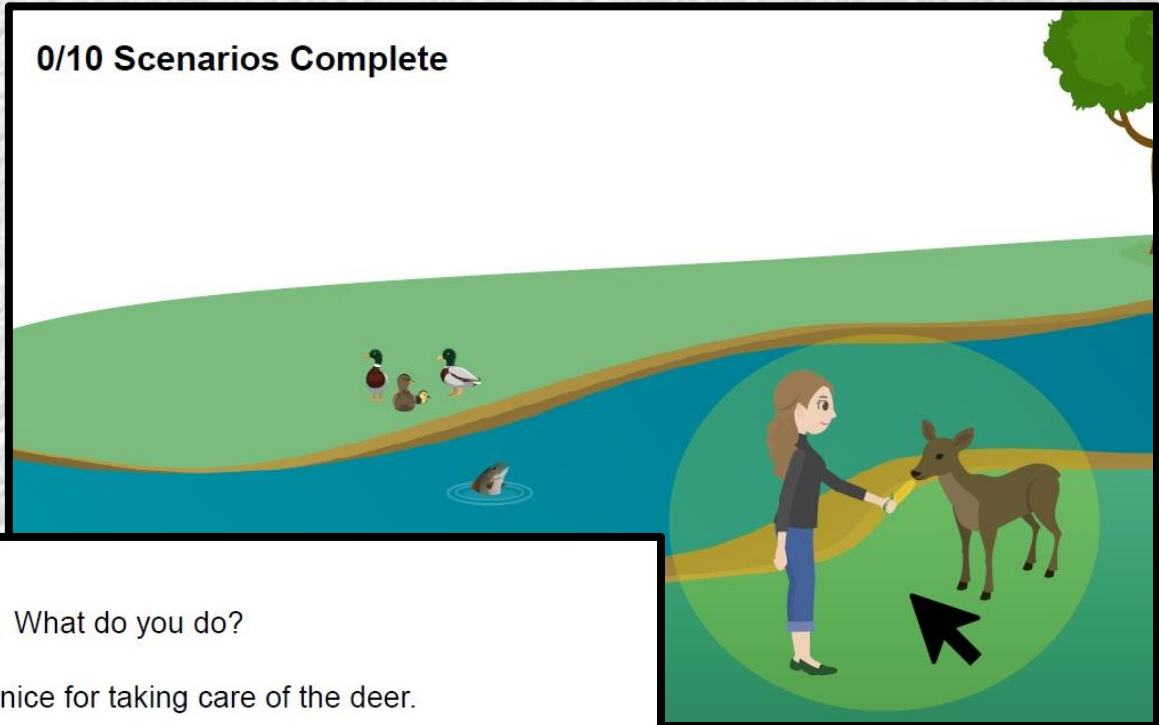
*E. coli* is short for *Escherichia coli*, which are bacteria that grow inside \_\_\_\_\_.

- ☐ Cold-blooded animals (like fish, frogs and alligators)
- ☐ Warm-blooded animals (like deer, ducks, dogs and humans)
- ☐ Moist environments (similar to mold)
- ☐ Water bodies (similar to algae)



## Watershed Hero – Scenario evaluation game

0/10 Scenarios Complete



### Deer Feeding

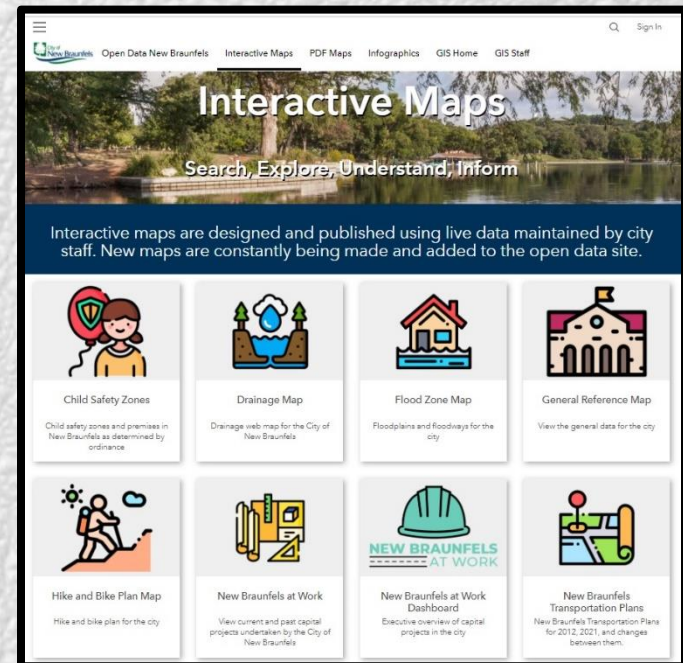
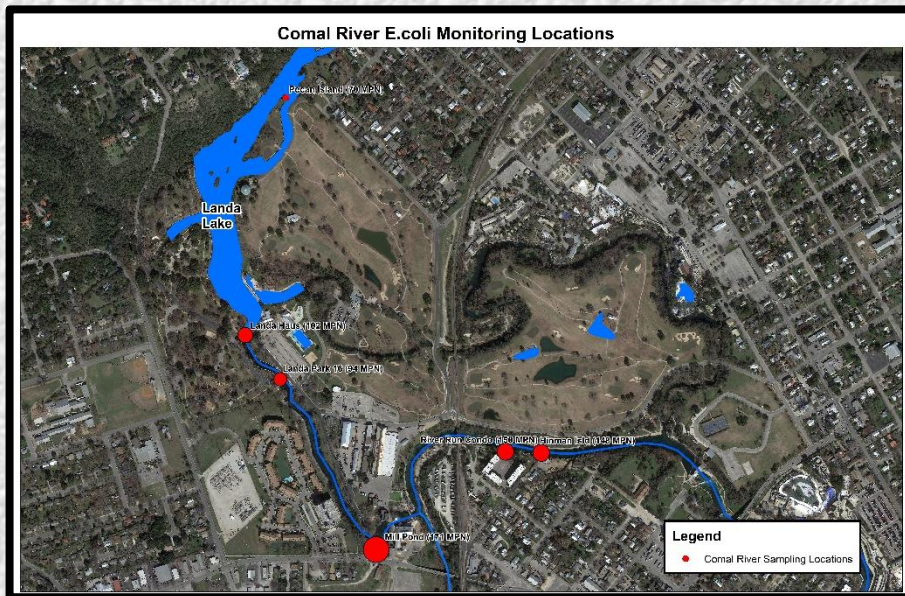
You see one of your friends feeding corn to deer. What do you do?

- ☐ Grab your chair and watch. Your friend is so nice for taking care of the deer.
- ☐ Explain to your friend that feeding deer so closely is unsafe. She should leave the corn out in a self-feeder and observe at a distance.
- ☐ Tell your friend that corn is not nutritious for deer and recommend she feed the deer natural foods like flowers and grass instead.
- ☐ Ask your friend to stop feeding the deer, and ask her to come with you to look for and photograph (from a distance) deer in their natural habitats.



## Watershed Visualization Tool

- Production began Summer 2021
- Using ESRI ArcGIS StoryMap as a framework
- Will display water quality information, sub-watersheds within the city, storm inlets and outfalls
- Map will be available on the WPP website and the CoNB GIS Portal





## Headwaters at the Comal Watershed Education Program

- Watershed curriculum finalized in late 2020; watershed activities are integrated into overall programming schedule
- Headwaters at the Comal currently hosting summer events, planning to host field trips in Fall 2021







## Hands-on Learning Activity

- Hands-on activity focuses on the lifecycle of bacteria and how bacteria levels are monitored in nature
- Classroom kits consist of a handbook for the activity, workbooks, and the supplies need for the bacterial culture growth experiment
- CoNB staff will provide kits to teachers interested in incorporating this activity into their curriculum


**What is *E. coli*?**




A rod-shaped bacterium found in the environment, food and our intestines



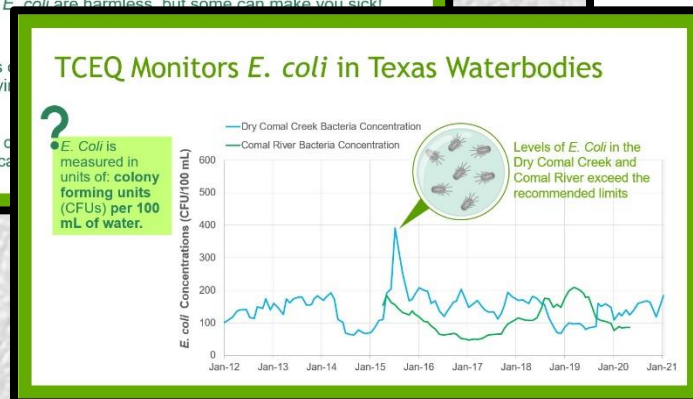
Most types of *E. coli* are harmless, but some can make you sick!



High numbers of bacteria and viruses can cause illness



*E. coli* can be cultured and ideal indicator





## Wildlife Waste Removal

- CoNB has contracted with an animal waste removal service to pick up animal waste in Landa Park
- Waste removal service is performed twice per month
- Since May 2021 over 500 lbs. of waste has been removed





# Storm Event Monitoring

## Stormwater Sampling

- Stormwater sampling program to begin in Summer 2021
- Four sampling events at 12 locations – 4 stormwater outfalls to the Comal River, 8 SW outfalls to Dry Comal Creek
- Data collected will be used to inform a report defining prime locations for installation of structural stormwater BMPs





# Next Steps...



- **Continue implementation of the Dry Comal Creek and Comal River WPP. Current grant-funded projects end August 2022.**
- **Awarded FY21 319(h) NPS grant funding through TCEQ to support continued WPP implementation**
  - **New grant contract begins September 1<sup>st</sup>, 2022**





**Additional WPP Information:**

**[www.nbtexas.org/wpp](http://www.nbtexas.org/wpp)**





# Questions?

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[https://www.youtube.com/watch  
?v=aCx2GvVrHF0](https://www.youtube.com/watch?v=aCx2GvVrHF0)