



# Upper Guadalupe River Bacteria Impairment

Tara Bushnoe

Upper Guadalupe River Authority  
Natural Resources Coordinator



# Upper Guadalupe River Bacteria Impairment

- Bacteria impairment for contact recreation in a 3.5 mile reach of Guadalupe River in Kerrville
- Identified by 2002 Texas Water Quality Inventory
- Placed on 303(d) list in 2002

# Upper Guadalupe River Bacteria Impairment

- Low bacteria levels upstream of Kerrville
- Two areas of high bacteria levels
  - Highway 16 Bridge
  - Flat Rock Lake
- Bacteria levels higher in the summer
- Potential sources: birds, humans, livestock, and dogs

# Impaired Area



# Bacteria Reduction Plan

- October 17, 2011 – August 31, 2014
- Tasks
  - (1) Project Administration
  - (2) Water Quality Assessment
  - (3) Bird Deterrent BMP
  - (4) Pet Waste BMP
  - (5) Waterfowl Management BMP
  - (6) On Site Sewage Facility BMP
  - (7) Storm Water Runoff BMP
  - (8) Public Participation
  - (9) Project Summary Report

# Bacteria Reduction Plan for the Upper Guadalupe River - Tasks

- Project Administration
- Water Quality Assessment
  - Monthly synoptic sampling – CRP funded currently
  - Four main stem intensives
  - Four Louise Hays Park intensives
  - Water quality model update
  - Analysis of control measure effectiveness

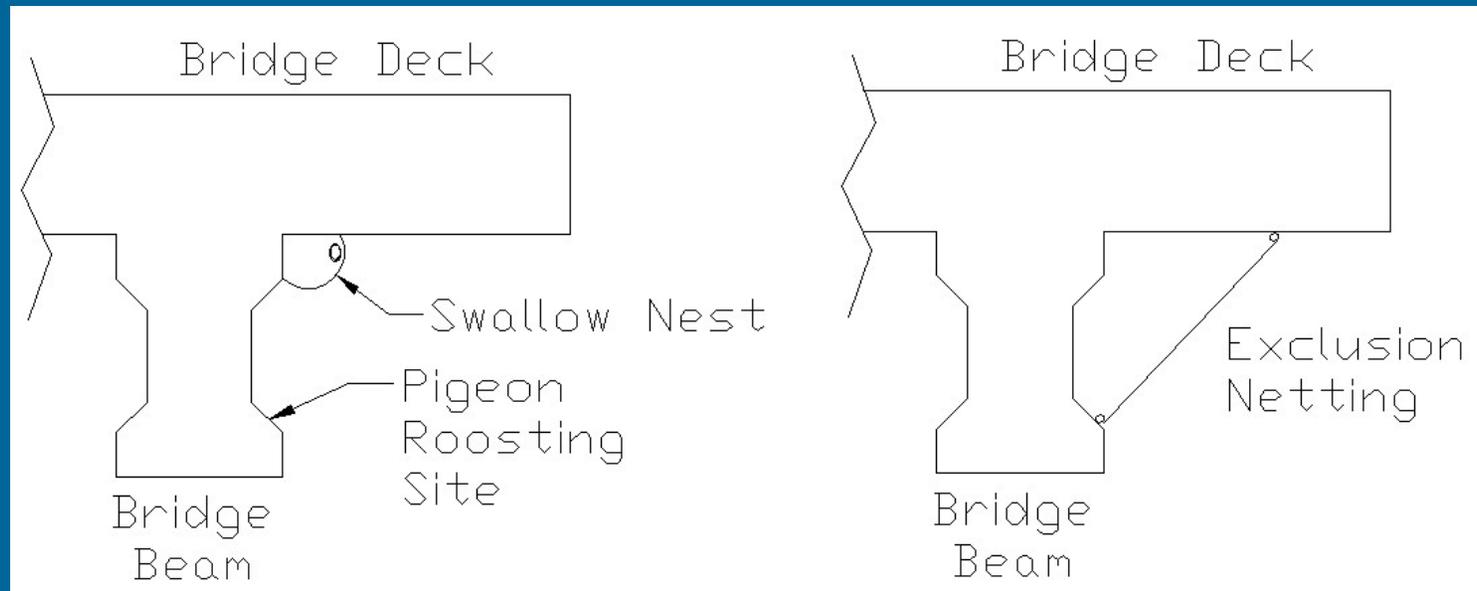
# Bird Deterrent BMPs

- Objective: to reduce the number of birds roosting directly over the water.
- Pigeons
  - Non-native species, present year round.
  - Many removal options: trapping, poisons, chemical and physical deterrents
- Swallows
  - Migratory birds, present in spring and summer.
  - Limited removal options, generally exclusion is used



# Bridge-Roosting Birds

- Exclusion Structures

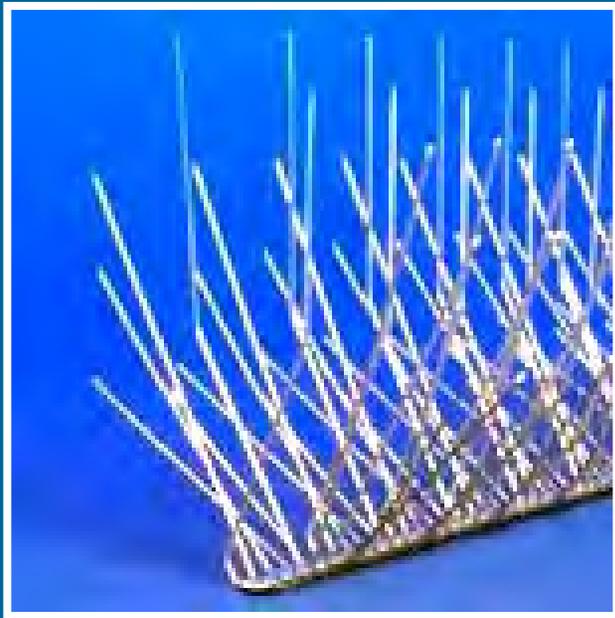


**Before**

**After**

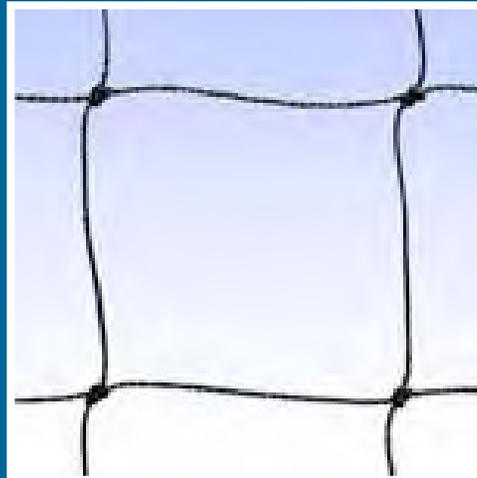
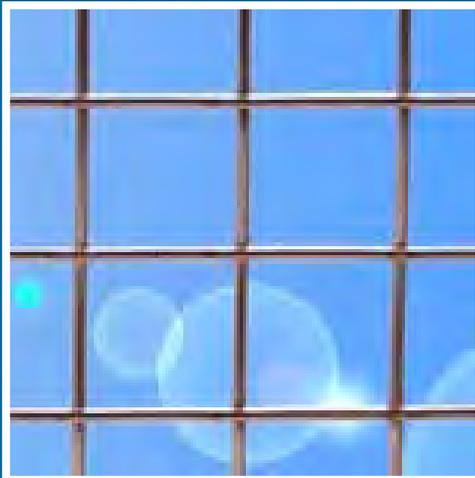
# Bridge-Roosting Birds

- Exclusion Structures
  - Spikes



# Bridge-Roosting Birds

- Exclusion Structures
  - Netting
    - Galvanized
    - Stainless
    - Polypropylene or polyethylene netting





# Poop Pollutes!

Bacteria found in pet and waterfowl feces have become a problem in the Upper Guadalupe River through Kerrville. In order to maintain swimming, wading, and other recreation uses of the park we need your help.

Clean up after your pet to help keep our river clean!



## Problems

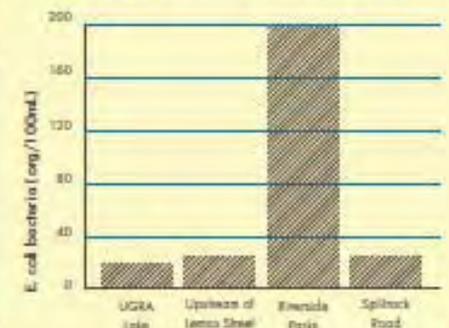
- \* Bacteria levels in riverside park areas are much higher than other areas of the Upper Guadalupe River, and sometimes exceed the State standard for contact recreation
- \* Pet waste may contain harmful pathogens (bacteria, viruses, protozoa) that can make the water unsafe for recreation and other uses
- \* Pet waste contains nutrients that may accelerate the growth of nuisance algae

## Solutions

- \* Be responsible for your pet – scoop the poop and then toss it in the trash
- \* Be a hero – pick up pet waste left behind by others and report violators to the Kerr County Environmental Health Department at 896.9020
- \* Notify the Upper Guadalupe River Authority at 896.5445 if the bag dispenser is empty

Let's keep OUR river clean!

## Guadalupe River Bacteria Levels



## It's the Law!

**TEXAS HEALTH & SAFETY CODE § 341.013**  
Waste products, polluting material ... or other waste of any kind may not be deposited or disposed of in a manner that may cause the pollution of the surrounding land or the contamination of groundwater or surface water. **Maximum fine: \$200**

Brought to you by the TMDL Stakeholders Group, find out more at [www.ugra.org/projects.html](http://www.ugra.org/projects.html)

Material adopted from the City of Austin Watershed Protection

Off leash is not off the hook

# Waterfowl Management BMPs

- Objective: to reduce the number of waterfowl along the river
- Primary types of control measures:
  - Trapping and removal
  - Reduce public feeding



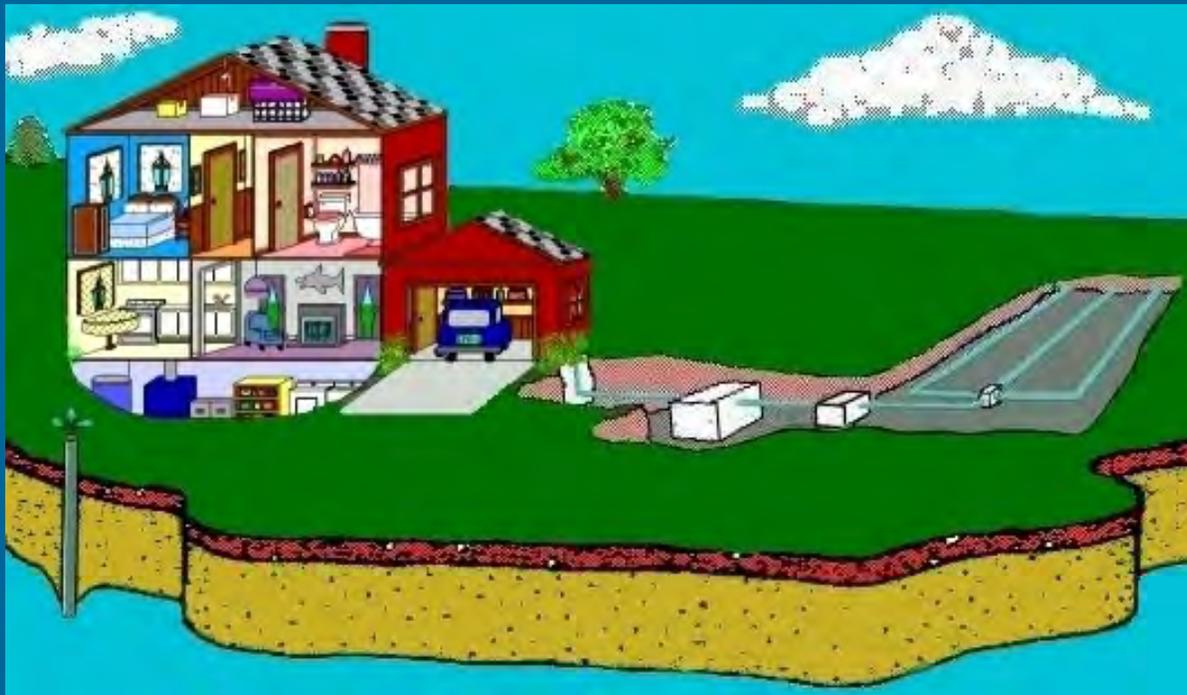
# Waterfowl

- Education
  - Booths at community events
  - Radio public service announcements
  - Easter press release
  - Newspaper articles



# On Site Sewage Facilities BMPs

- Map priority area
- Develop OSSF educational materials
- OSSF site inspections



# Storm Water Runoff BMPs

- Street sweeping
- River clean ups
- Storm water education program
  - Kiosk
  - Brochures, public service announcements, press releases

# Bacteria Reduction Plan for the Upper Guadalupe River - Tasks

- Public Participation
  - Stakeholder group
  - Providing information to public
- Project Summary Report

# Year One Activities

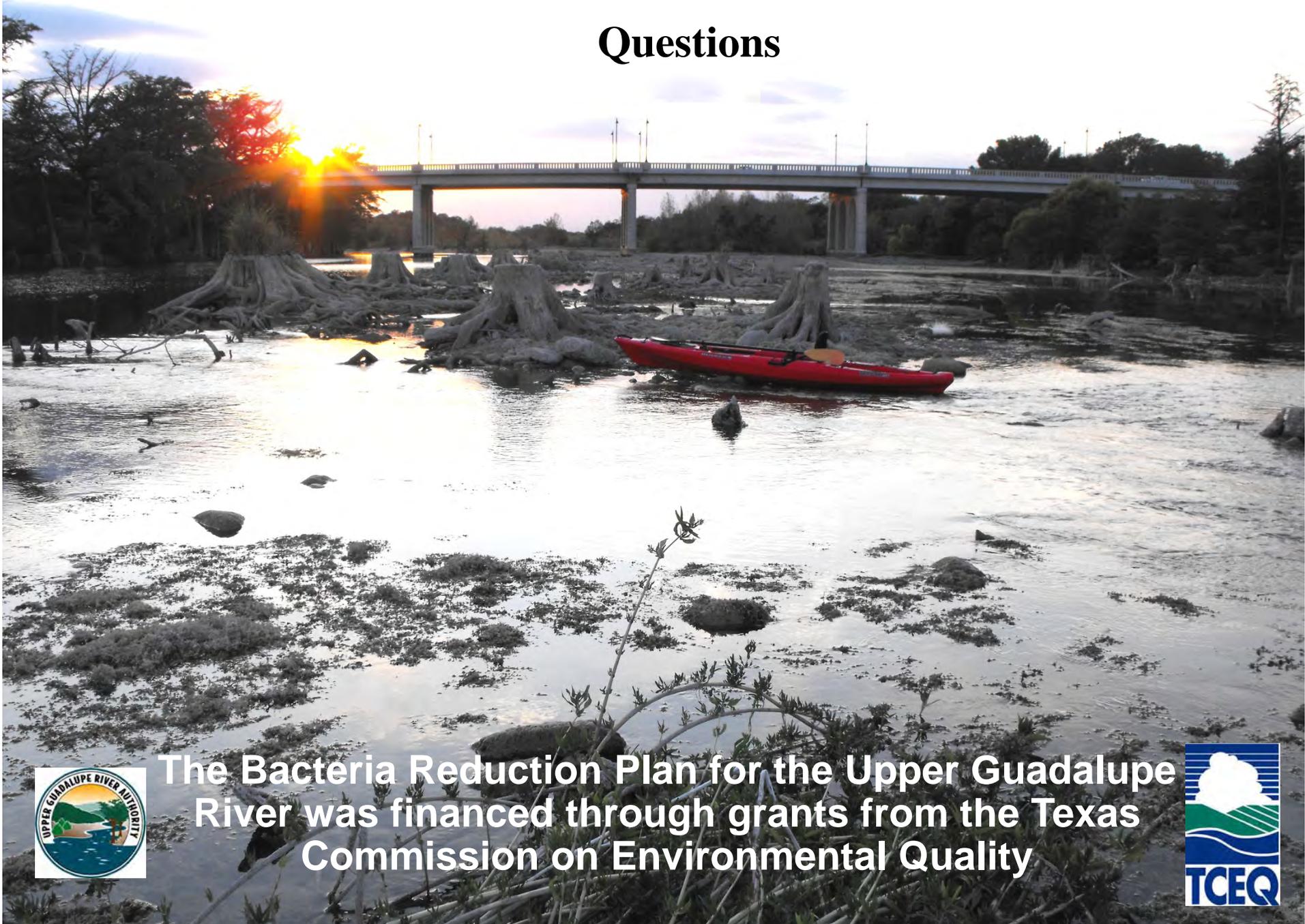
- Water quality monitoring
- Engineering subcontractor procurement
- Bird deterrent structure design
- Pet waste station installation
- Waterfowl management
- Mapping of OSSF priority area
- Purchase educational kiosk
- Street sweeping
- River clean ups
- Develop communication plan
- Education programs

# Match Requirement

- UGRA
- City of Kerrville
- Kerr County
- TxDOT
- Clean Rivers Program



# Questions



The Bacteria Reduction Plan for the Upper Guadalupe River was financed through grants from the Texas Commission on Environmental Quality

