The Poop Stops Here:
E. coli Sampling for Volunteer Water Quality Monitors

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National Water Quality Monitoring Council
May 3, 2012
Texas Colorado River
Colorado River Watch Network (CRWN)

- Volunteer water quality monitoring program became part of Lower Colorado River Authority (LCRA) in 1992
- Creates early warning system that alerts LCRA to potential water quality threats
- Encourages and supports community-based stewardship
- Provides citizens, teachers, and students with the resources necessary to monitor and protect the waterways of the lower Colorado River watershed
Water quality is determined by the *physical*, *chemical*, and *biological* characteristics of water.
Colorado River Watch Network
Water Quality Monitoring Sites

16 counties
120 monitoring sites
112 certified monitors
School groups, citizens, park rangers, preserve managers, and outdoor learning programs
CRWN Indicators of Water Quality

- Water temperature
- Air temperature
- pH
- Specific conductance (dissolved solids)
- Dissolved oxygen
- Nitrate nitrogen
- Field observations
- Transparency / Secchi (optional)
- *Escherichia coli* (*E. coli*) (optional)
E. coli Sites

- E. coli is monitored at locations where water contact recreation takes place – locations that are popular for swimming and wading
- Water Quality Index Sites: State of the River Report
  - Gilleland Creek: listed for bacteria
- 54 monitors are certified to test for E. coli at 65 sites
Barton Creek

Water contact recreation locations are priority sites.
Education Campaign

IF YOU THINK PICKING UP DOG POOP IS UNPLEASANT, TRY DRINKING IT.

Pet waste washes into storm drains, polluting our rivers, lakes and drinking water sources. Get the scoop.
Coliscan Easygel Method

- Pipettes, whirl pak, petri dishes, and Coliscan Easygel
Hovabator Incubator

- Incubate samples in petri dishes for 24 hours at 35.5 degrees celsius
E. coli in Petri Dish

- Dark blue colonies with intense blue center are E. coli.
Gilleeland Creek TMDL

CRWN Gilleeland Creek volunteer monitors Colin Rice and April Rose, who monitor at Gilleeland Creek @ Swenson Farm Road
East Bouldin Creek
Easy choices for clean water

- Fight litter
- Practice least toxic landscaping
- Don’t over-fertilize
- Dispose of household chemicals properly
- Scoop the poop…
Summary

• Volunteer monitors provide valuable data

• E. coli sampling can detect potentially dangerous levels of bacteria

• Education can help improve water quality
Water quality monitoring
Colorado River Watch Network

Volunteers provide early warning system for pollutants

The Colorado River Watch Network (CRWN) began with a small group of citizens concerned about water quality. It has grown into a sophisticated system of more than 100 certified volunteer monitors at 100 sites along the Colorado River.

The River Watch Network supports volunteers who monitor the water quality of the Colorado River. The network collects data from these sites, and analyzes it, creating an early warning system that alerts LCRA to potential water quality threats.

See these pages for more information:
- Volunteer monitors
- Water quality indicators
- Frequently asked questions
- CRWN water quality data
- CRWN Water Quality Monitoring Manual (79 pages; requires Adobe Acrobat)
- Data Sheet (Adobe Acrobat)
- Stream Survey (Adobe Acrobat)
- CRWN Volunteers Blog

History
In 1986, a handful of Austin citizens, teachers, and students began sampling water along a tributary of the Colorado River. Within two years, their program had expanded to about 20 sites along the Colorado. The students’ work turned up potentially problematic levels of phosphate, a water pollutant — then commonly found in laundry detergents. Phosphates encourage algae to grow, robbing the water of oxygen. In 1991, the group presented their findings to the Austin City Council, and the city passed the first ban in Texas of detergents containing more than 0.5 percent phosphates. By December of the same year, river watch monitors in Smithville, La Grange, and Wharton successfully lobbied their city councils for similar ordinances.

In 1992, LCRA began to manage the Colorado River Watch Network program, and helped expand monitoring sites along the river from Brownwood to the Gulf of Mexico. The success of the program has earned grants from the National Science Foundation and the Environmental Protection Agency. The Colorado River Watch Network has been honored by the EPA, the State of Texas, the City of Austin and many other organizations.

Monitoring milestones
- 1994: City of Austin wastewater treatment facility corrects problems associated with high levels of nitrates detected by River Watch monitors.
- 1997: CRWN wins Texas Water Utilities Association’s Leadership Award.
- 1998: Awarded Texas Natural Resource Conservation Commission’s (now TCEQ) Outstanding Lead Partner Award.
- 2000: US EPA’s 5th National Volunteer Monitoring Conference co-hosted by LCRA in Austin.
Questions?

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