Charleston Waterkeeper’s Recreational Water Quality Monitoring Program Potential as an Educational Tool
Charleston Waterkeeper

Organizational Background
Charleston Waterkeeper’s mission is to protect and restore the quality of Charleston’s waterways while helping to create a more engaged and informed public.

PROTECT YOUR RIGHT TO ______ABLE WATER.
Waterkeeper Alliance

- Supports and empowers member Waterkeeper organizations to protect communities, ecosystems, and water quality
- Promotes the Waterkeeper model for watershed protection worldwide
- Advocates for issues common to Waterkeeper programs
Waterkeeper Alliance

Over 250 Waterkeeper Organizations Worldwide – Find Your Local Waterkeeper
Waterkeeper Alliance in South Carolina

Waterkeeper organizations in the state of South Carolina

- Charleston Waterkeeper
- Congaree Riverkeeper
- Waccamaw Riverkeeper
- Catawba Riverkeeper
- Savannah Riverkeeper
Charleston Waterkeeper: Our Watershed
Issues in our Watershed

Fecal bacteria is the most frequently observed pollutant within our watershed.
Charleston Waterkeeper’s Efforts

Monitor

Notify

Take Action
Program Goals

• Assist in formulation of the South Carolina 303(d) list of impaired (unhealthy) waters

• Inform the public concerning the quality of waterways for primary contact recreation (swimming)

• But why stop there?
• The Clean Water Act requires each state to develop a list of impaired (unhealthy) waterways every two years.

• The list contains all waterways in the state that do not meet the requirements for their intended purpose.

• South Carolina’s draft 2014 list of impaired waterways included 85 unhealthy sites in our watershed.
# 303(d) List of Unhealthy Waters

<table>
<thead>
<tr>
<th>TMDL TARGET DATE(S)*+</th>
<th>NOTE</th>
<th>BASIN</th>
<th>HUC</th>
<th>STATION</th>
<th>LOCATION</th>
<th>COUNTY</th>
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**USE** – Use support impairment for aquatic life and/or recreational uses.

**Fish Consumption:**
- AL
- FISH

**Recreational Use:**
- Swimming: KK
- SHELLFISH

**Shellfish Harvesting:**
- For information on the current shellfish harvesting areas status, see the current Annual Update Reports on our website at [http://www.scdhec.gov/water/html/shelfish.html](http://www.scdhec.gov/water/html/shelfish.html)

**CAUSE** – Pollutant(s) that resulted in impaired classified use. The parameters are denoted as follows:

- Chlorophyll A: CHL-A
- Chromium: CR
- Mercury: Hg
- Copper: Cu
- Dissolved Oxygen: DO
- Enterococci: ENTERO
- Fecal Coliform Bacteria: FC
- Hydrogen Ion Concentration: PH
- Total Nitrogen: TN
- Total Phosphorus: TP
- Lead: Pb
- Polychlorinated Biphenyls: PCB
- Nickel: Ni
- Zinc: Zn
- E. coli: Ecoli
- Cadmium: Cd
- Macroinvertebrates: BIO
- Turbidity: TURBIDITY

- OTHER
Issues in our Watershed

Fecal bacteria is the most frequently observed pollutant within our watershed.

Frequency of Pollutants within our Watershed

- Fecal Bacteria: 39
- Dissolved Oxygen: 22
- Heavy Metals: 15
- Nutrients: 15
- Turbidity: 10
- Chlorophyll A: 7
- pH: 3
Program Goals

• Assist in formulation of the South Carolina 303(d) list of impaired (unhealthy) waters

• Inform the public concerning the quality of waterways for primary contact recreation (swimming)
Program Goals: Background
Program Goals: Background
Relevance

• Exposure to fecal bacteria in high concentrations poses health risks.
Charleston Waterkeeper’s Efforts

CharlestonWaterkeeper.org

Swim Guide

Scorecard
Educational Opportunities
Watersheds

Raise your hand if you live in a watershed!
Watersheds
Watersheds
Our Watershed

#waterwednesday
Watershed Model
Ways we use water

What's in a name?
Recreation

- Charleston is home to a culture of water-based recreational use.
South Carolina Recreational Culture

There is 1 boat for every 12 people in South Carolina.
South Carolina
Recreational
Culture

Almost two-thirds of us visit the beach annually
South Carolina Recreational Culture

56% of adults are fresh and/or saltwater fishermen (and women)
How we impact water quality

The solution to pollution is not dilution
Human Impacts
Human Impacts
Stormwater Runoff
Stormwater Runoff
Visible Pollution: Marine Debris

- Marine debris are more than just unsightly.
Marine Debris

Can cause adverse health impacts to ourselves, animals, and our waterways

Art by Chris Kemp
Not so Visible: Fecal Pollution
Local case study

The numbers don’t lie
Water Quality Data

charlestonwaterkeeper.org

Swim Guide

Scorecard
## Water Quality Data

[CharlestonWaterkeeper.org](http://CharlestonWaterkeeper.org)

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Add 1000 more rows at bottom.
Water Quality Data

9/30/15

10/7/15
Water Quality Data

charlestonwaterkeeper.org

Swim Guide

Scorecard
Water Quality Data

charlestonwaterkeeper.org

Swim Guide

Scorecard
Water Quality Data

Ways You Can Help Protect Your Local Waterway

- Have your septic system inspected every 1-2 years and pumped every 3-5 years.
- Create rain gardens.
- Use Charleston Waterkeeper’s mobile pumpout service.
- Collect rain water in barrels.
- Divert stormwater into vegetated buffers.
- Support water and sewer infrastructure spending.
- Minimize the impervious surface on your property.
- Report sanitary sewer overflows to treatment authorities.
- Pick up and properly dispose of pet feces in a toilet, wrapped in plastic in the trash, or buried at least 5 inches deep in your yard.

Write to DHEC!

Tell DHEC that you are concerned about the quality of your waterway for swimming, paddle boarding, or whatever your favorite activity is. Let DHEC know that you are ready to take steps to improve local water quality. Specifically, ask for a restoration plan to be developed and implemented for your waterway.

SC DEPARTMENT OF HEALTH & ENVIRONMENTAL CONTROL
Bureau of Water: TMDL & 303(d) Section
c/o Wade Cantrell
2600 Bull St.
Columbia, SC 29201
PHONE: (803) 898-3548 EMAIL: cantrewm@dhec.sc.gov
How we can take action
Take Action

- Ways to help improve water quality
Take Action

- Pick up that poop!
- Our research in Upper Inlet Creek showed:
  - Picking up pet waste from dogs at least half the time would reduce inputs from bacteria by 20%
  - Picking up pet waste from dogs all of the time would reduce inputs by 40%
Take Action

• Reduce polluted runoff while reducing your freshwater consumption!

Harvest your rainwater

Garden with native plants

Build a rain garden in flood prone areas
Take Action

- Reduce polluted runoff while reducing your freshwater consumption!

Harvest your rainwater

Garden with native plants

Build a rain garden in flood prone areas
Education Program

Take advantage of our boots-on-the-water knowledge!
Education Program

- Invite Charleston Waterkeeper to come speak to your class, group, or club!
  - What is a Waterkeeper
  - A Waterkeeper’s role in community
  - Charleston Waterkeeper’s work and advocacy campaigns
  - Tidal creek health and scientific research
  - Recreational Water Quality Monitoring Program
  - Local waterway stewardship
Contact Information

- cheryl@charlestonwaterkeeper.org
- info@charlestonwaterkeeper.org
- CharlestonWaterkeeper.org
- Charleston Waterkeeper Office: (843) 607 – 3390
- Swim Guide – theswimguide.org
- Be social with us!