



## Town of Thomaston– Georges River Tidewater Association St. George Estuary Water Quality Monitoring Program



*“The single biggest surprise was the extraordinarily low pH values. Acidification of this magnitude represents a threat not only to clams but to other marine organisms...”*

Jon Eaton, Thomaston Selectboard and Georges River Tidewater  
Association Steering Committee 2013

### **PARTNERS**

Georges River Tidewater Association (GRTA) and Georges River Land Trust. The Georges River Tidewater Association (GRTA) is a group of citizen volunteers working to protect and restore the St. George River Estuary through advocacy, public education and water quality monitoring.

### **ISSUE AREA**

Mid-coast Maine’s 225-square-mile Georges River watershed is a unique and historic area of mountains, sea coast, lakes, tidal streams and inlets through which the beautiful Georges River flows. The watershed extends from Montville in Waldo County to Port Clyde in Knox County where the 51-mile-long river flows into Muscongus Bay.

### **PROJECT DESCRIPTION** (completed March 2013)

The GRTA launched a water quality monitoring program to measure pH, dissolved oxygen, water temperature, salinity, turbidity, and nitrogen in the St. George Estuary focusing on the shorelines of Thomaston, Warren, Cushing, South Thomaston, and St. George. The project was to sustain and expand the monitoring program; build a baseline of data to provide a more complete picture of the

estuary's habitat that will prove critical in detecting changes over time; and conduct outreach into the Midcoast community and school system to ensure ongoing support for the program and enhanced estuary stewardship.

### APPROACH

Created, maintained and updated on-line information formats; Developed articles and press releases about the water-quality monitoring program; facilitated education outreach and curriculum development.

### RESULTS

Developed a 2012 State of the St. George Estuary Report; [http://www.georgesriver.org/documents/grta/state\\_of\\_the\\_river\\_2012.pdf](http://www.georgesriver.org/documents/grta/state_of_the_river_2012.pdf) Developed an Annual Index of Estuary Health based on key indicators of dissolved oxygen, pH and total nitrogen; specific water quality results/data was were utilized by the Maine DEP in its 305b report to the USEPA— State of ME DEP Integrated Water Quality Monitoring Assessment Report (2014). Work was shared with the Gulf of Maine Council on the Marine Environment and in four public meetings. The Maine Coastal Observing Alliance was formed as a consortium of several coastal citizen monitoring groups including GRTA in 2014. The TORCH -Training for Observation of Coastal Habitats - is the result of an on-going partnership between the University of Maine's Darling Marine Center and an alliance of the Maine Coastal Observing Alliance.

The website [www.georgesrivertidewater.org](http://www.georgesrivertidewater.org) debuted on January 1, 2013 to celebrate the 25th anniversary of protecting and restoring the Georges River estuary through advocacy, public education and water quality monitoring however the website was subsequently hacked and is still down at time of writing.

### NEXT STEPS AND OPPORTUNITIES

The program has subsequently been expanded into the Weskeag River Estuary. This work and augments water-chemistry monitoring with direct observations on key indicator organisms such as clams, mussels and starfish. Design a sustainable program for measuring recruitment and growth success of these populations.

### NEEDS

Additional funding to continue outreach efforts and expand the monitoring program, prepare and publicize future State of the Estuary reports and annual indexes of estuary health and to develop life, earth and physical science companion project-based modules that integrate history, civics arts and humanities.

### LESSONS LEARNED

GTRA's Education, Outreach and Curriculum Development Team revealed a desire to grow this program into a series of cross-disciplinary modules that could form the basis of a semester-long course focused on exploring and developing a greater awareness and understanding of marine and estuarine issues.



### **APPLICABILITY FOR OTHER MUNICIPALITIES**

Programs and data similar to that obtained from this study should be encouraged to characterize the health of these estuaries and monitor long-term trends.

### **RECOMMENDATIONS**

That the Maine Department of Environmental Protection (MDEP) include the results of this study in the St. George Estuary along with other similar work showing symptoms of dissolved oxygen, pH and nutrient stress. That the Maine Department of Marine Resources (DMR) include the St. George Estuary in its planned clam population studies in Maine estuaries.

### **CONTACT**

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Financial assistance provided by the National Oceanic and Atmospheric Administration, U.S. Department of Commerce Grant CZM NA10NOS4190188 to the Maine Coastal Program. Coastal Community Grants are awarded and administered by the Maine Department of Agriculture, Conservation and Forestry Municipal Planning Assistance Program.

