

Lafayette River Scorecard 2012



New data shows historic improvements



April 27, 2012

Lafayette River Scorecard 2012

<p>Goal: Make the Lafayette River safe for swimming by 2014... Reduce harmful bacteria by 2014 to levels safe for swimming in all practical reaches of the Lafayette.</p> 	<ul style="list-style-type: none"> • VA Department of Environmental Quality (DEQ) in 2011 found no bacteria violations for state standards for safe swimming • Don't swim yet. A 6-year average of improved scores will be needed to meet state standards. 	C
<p>Goal: Eat the Norfolk oyster by 2014... Reach "restricted" rather than "prohibited" oyster harvesting, based on reduced bacteria.</p> 	<ul style="list-style-type: none"> • More than 50% of the Lafayette met Virginia Department of Health bacteria criteria for eating oysters—2011. • Don't eat the oysters yet! A careful look at viruses, nearby wastewater plants and other factors is needed. 	C
<p>Goal: Reduce algae to non-harmful levels by 2020... Reduce the size and extent of harmful algal blooms.</p> 	<ul style="list-style-type: none"> • More than 80% of the Lafayette was covered by harmful algae in July and August 2011 (F for those months; overall, C). • Continue to reduce lawn fertilizer. 	C
<p>Goal: Engage citizens to make a difference...</p> <ul style="list-style-type: none"> • Recruit 1,000 River Star Homes in the Lafayette area by 2014 (250 /year). • Enlist all Lafayette area schools as River Star Schools (28 schools; 7/year). 	<ul style="list-style-type: none"> • River Star Homes grew from 0 to 611 in the Lafayette area (845 across Elizabeth River watershed). • Recruited 18 of 28 Lafayette schools, 2010-11. • Revised 2014 goal to 1500-2000 homes. Sign up today! RiverStar-Homes.org. 	C

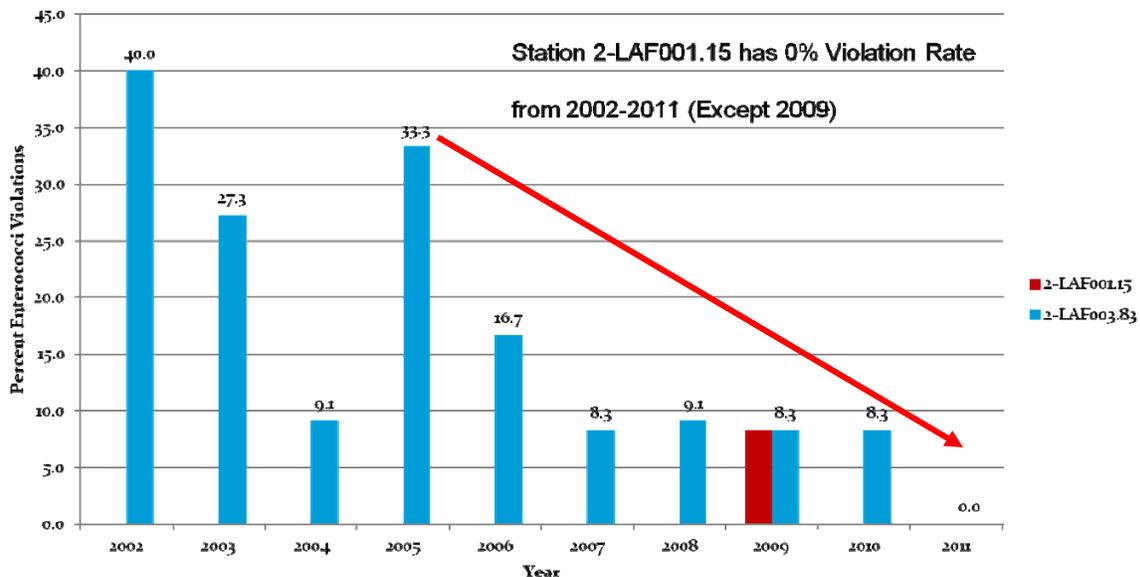
Lafayette Scorecard Summary: Swimming and Eating Oysters May Not Be That Far Off

- **This scorecard presents data showing the most improvement in the health of the Lafayette River in modern history.** These surprising and historic improvements are the result of dozens of organizations and many hundreds of citizens, all working together to carry out a 4-part action plan for making the Lafayette the first branch of the Elizabeth to be “fishable-swimmable” – by 2014.
- **For the first time in modern history, the Lafayette in 2011 showed no violations of state bacteria standards for safe swimming.** The river still has a distance to go before we can declare safe swimming. Virginia Department of Environmental Quality looks at a six-year average for its bacteria tests to make this determination. The Lafayette’s six-year history, while showing steady improvement, does not meet safety standards. Elizabeth River Project also has data showing most of the Lafayette is unsafe for swimming for at least 3 days after a rainfall of one-half inch or more. Storm water runoff carries dog poop, lawn fertilizer and more into the river, and remains a significant problem.
- **Findings signal a potential return to harvest of the “Norfolk oyster.”** Bacteria data for the first time shows more than 50% of the Lafayette meeting VA Department of Health’s standards for safe harvest of oysters. Caution, though - because of two waste water treatment facilities near the Lafayette, the state will need to take into account additional concerns such as viruses before considering lifting oyster harvest prohibitions. A down-grade probably would be from “prohibited” to “restricted” and would require oysters to be relayed to another river for at least 10 days before consumption.
- **Many organizations and individuals deserve the credit.** Among the most significant efforts: a massive overhaul of sewer and storm water systems along the Lafayette by **HRSD** and the **City of Norfolk** to reduce bacteria in the river; the **Elizabeth River Project’s 22 “River Star Businesses”** and **611 “River Star Homes”** in the Lafayette area; oyster restoration efforts led by **Chesapeake Bay Foundation** and **NOAA**, and wetland restorations by multiple partners, many organized by **Lafayette Wetlands Partnership**.
- **The scorecard gives the Lafayette a “C” in each of 4 categories:** bacteria levels for safe swimming, bacteria levels for safe oyster harvest, size and extent of harmful algal blooms and citizen involvement.
- **Keep the momentum going and together we can achieve our 2014 goal:** A swimmable fishable Lafayette! Many thanks to all of our partners and donors for this exciting progress.

Goal: Make the Lafayette River safe for swimming by 2014... *Reduce harmful bacteria by 2014 to levels that are safe for swimming in all practical reaches of the Lafayette.*

- For the first time in modern history, VA Department of Environmental Quality (DEQ) in 2011 did not find any bacteria violations in the Lafayette for state standards for safe swimming!
- More progress is needed, however, before we can declare safe swimming.
 - The state looks at a six-year average to make that determination. The Lafayette showed 11 violations (out of 71 observations) during the 6 years the state averaged.
 - We need to make sure this past year represents a lasting improvement.
 - We especially caution against swimming after a rainfall. Elizabeth River Project data shows unsafe swimming throughout much of the Lafayette for at least three days after a rain of ½” or more.
 - Nonetheless, the 2011 data does mean we are trending in a very encouraging direction. We can hope to make our 2014 goal if we keep up the momentum.
 - The mouth of the Lafayette does meet state swimming criteria already!

% Yearly Violation

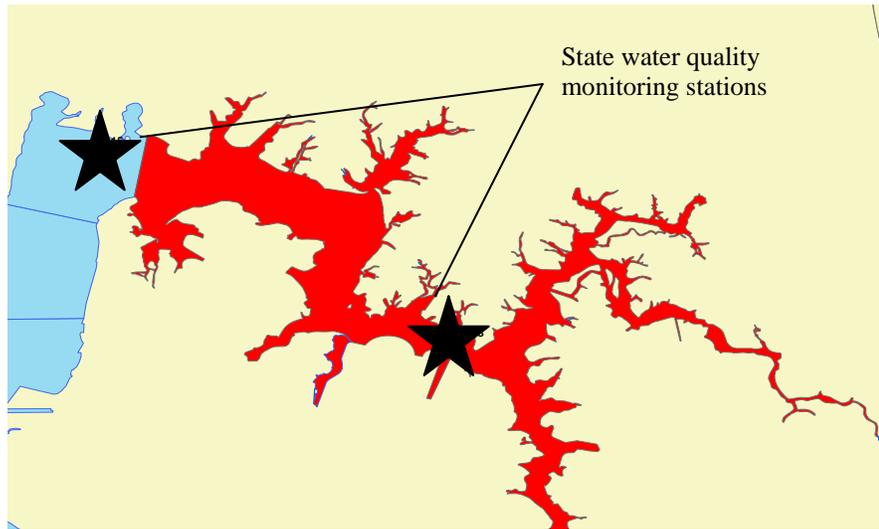


Blue bars represent bacterial violations at the DEQ station near the Granby Bridge and the red bar represents violations at the station near the mouth of the river. In 2011, there were no bacteria violations. Red arrow shows that violations have dropped steadily since 2005.

Swimmable Scorecard: C

(15.4% of DEQ observations over the 6 years, used in the 2012 DEQ Water Quality Assessment Integrated Report, were violations – 2005-2010; there is a time-lag for completion of this report and 2011 data was not included. From 2005-2010 there were 11 violations out of 71 observations from both monitoring stations collectively). Grades of A or B indicate the Lafayette meets our swimmable goal and grades C, D, or F indicate we are not yet meeting our goal.

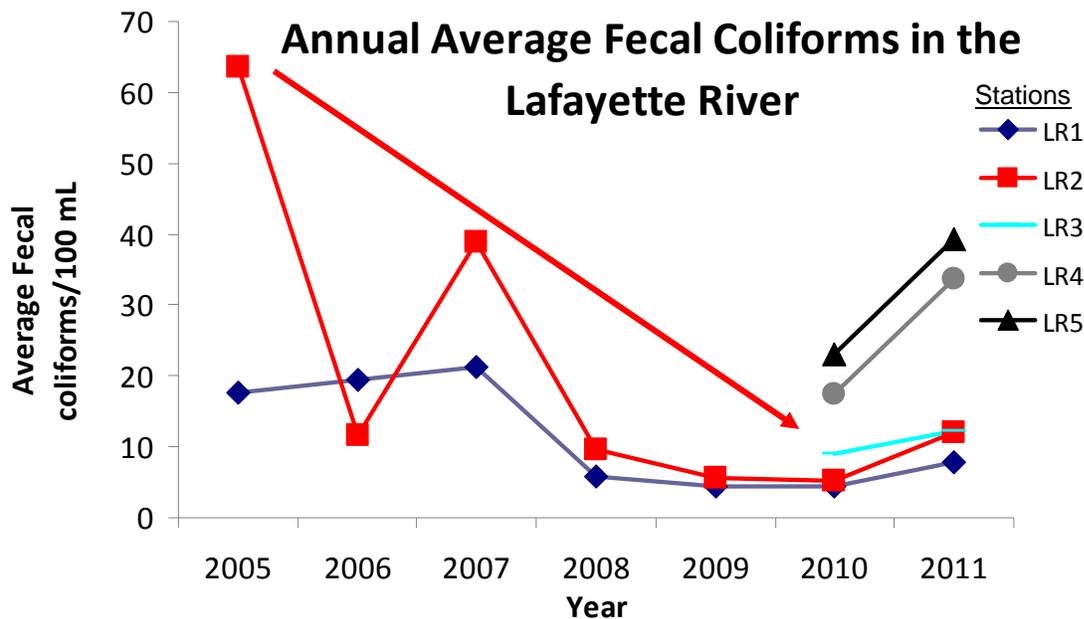
- A = 0% violations over the 6 years averaged by the state report
- B = 0.1% -10% violations over the 6 years averaged by the state report
- C = 10.1%- 20% violations over the 6 years averaged by the state report
- D = 20.1%- 40% violations over the 6 years averaged by the state report
- F = > 40.1% violations over the 6 years averaged by the state report



Blue = meets VA Department of Environmental Quality's standard for safe swimming. Red = does not meet the state's standard for swimming.

Goal: Eat the Norfolk oyster by 2014... *Reach the 2014 goal of “restricted” rather than “prohibited” oyster harvesting, based on reduced bacteria.*

- For the first time in recent history, more than 50% of the Lafayette River in 2011 met Virginia Department of Health’s criteria for bacteria levels that are safe for eating oysters.



- **Caution though—it is not yet safe to eat the once famous “Norfolk oyster.”**
 - The state is taking a careful look at many factors and has not yet reached the determination to lift the ban on harvest of oysters from the Lafayette.
 - If this determination is reached, the state’s ruling almost assuredly will be to prescribe “restricted” harvest, meaning the oysters must be moved to another river for at least 10 days to cleanse before eating. This is because of the location of two large waste water treatment plants near the mouth of the Lafayette that could contribute other problems besides bacteria, such as viruses.

Oyster Harvest Scorecard: C

The Lafayette River has a total of 1,777 acres of water and 943 of these acres meet the state's "fecal coliform" bacteria standard for oyster harvest. Thus a total of 53% of the Lafayette River that meets the state's bacterial level for consumption of shellfish. That leaves 47% of the river not meeting the criteria.

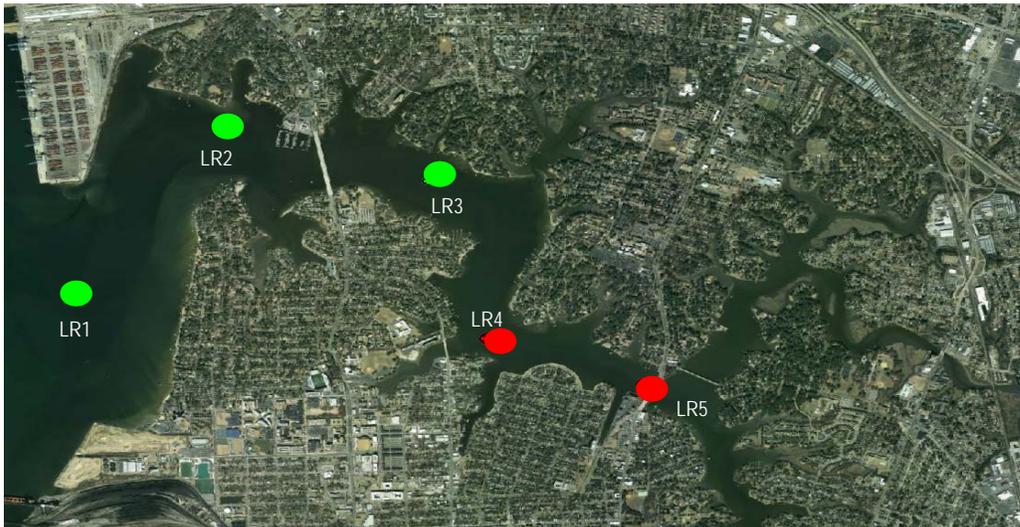
A = 100% of the river meets the state's bacterial level for consumption of shellfish

B = 99% - 75% of the river meets the state's bacterial level for consumption of shellfish

C = 74% - 50% of the river meets the state's bacterial level for consumption of shellfish

D = 49% - 25% of the river meets the state's bacterial level for consumption of shellfish

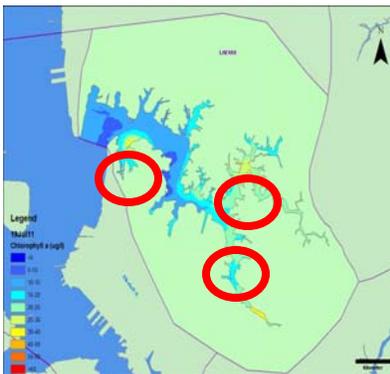
E = 24 - 0% of the river meets the state's bacterial level for consumption of shellfish



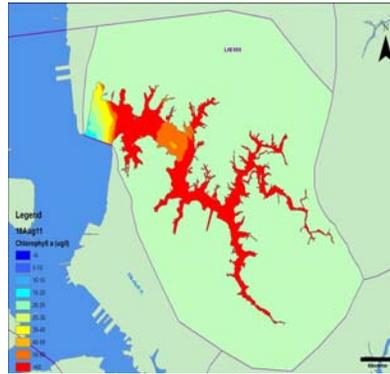
The monitoring stations which met the state's criteria in 2011 were the three closest to the mouth of the river (green dots on the map above). The two stations near Colley Bay and Granby Bridge currently do not meet the state bacteriological standards for shellfish consumption.

Goal: Reduce algae to non-harmful levels by 2020... *Reduce the size and extent of harmful algal blooms.*

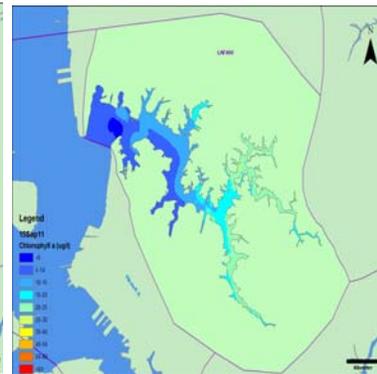
- A massive algal bloom continues to originate in the Lafayette each summer, then spread into the lower bay, contributing to low dissolved oxygen and potential fish kills.
- This problem needs continued focus on efforts such as reducing lawn fertilizer use.



July 19, 2011 – Harmful bloom begins in three areas of the river shown above.



August 18, 2011 – Harmful bloom covers over 80% of the river.

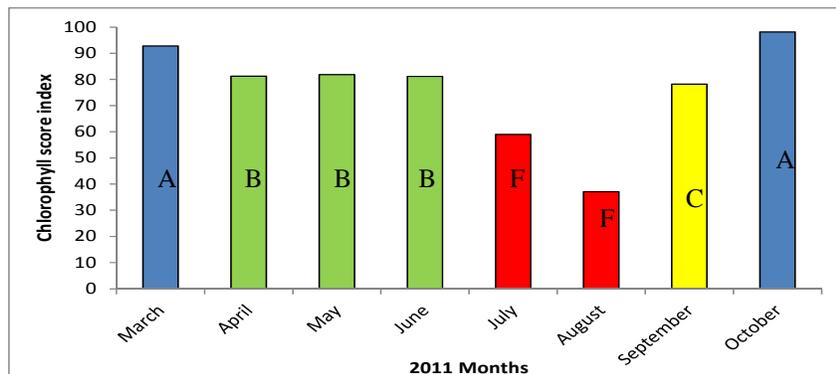


September 15, 2011 – Harmful bloom is almost gone – Winds from Hurricane Irene helped to disperse the bloom.

Algal Blooms Grade: C

About 84% of the Lafayette was covered by extremely dense levels of the harmful algae, *Cochlodinium polykrikoides*, in August 2011 - and July was not much better. For these two months, the extent and density led scientists to a grade of F. An overall score of C for the year is based on a scoring method developed by ODU and considered a work in progress. It involves entering HRSD dataflow information into a chlorophyll index to evaluate the density and coverage of the bloom. The scoring methods for algal blooms are presently a work in progress and these results should be considered estimates.

- A = 90-100 Index score
- B = 80-89 Index score
- C = 70-79 Index score
- D = 60-69 Index score
- F = <60 Index score



Goal: Engage citizens to make a difference...

- ***Recruit 1,000 River Star Homes in the Lafayette watershed by 2014 (250 new homes/year).***
- ***Enlist all schools in the watershed as River Star Schools (28 schools; 7 new/year).***

- **River Star Homes grew from 0 to 611 homes in the Lafayette watershed the first year (845 across the full Elizabeth River watershed).**
- **Elizabeth River Project also recruited 18 of 28 Lafayette schools, 2010-11.**

- River Star Homes commit to seven simple things they can do at home for the river.
- The Elizabeth River Project introduced River Star Homes at Lafayette RiverFest on April 30, 2011. More than 1,500 people attended the new festival – and 248 signed up in one day as River Star Homes.
- A year later, participating homes have grown to 845 (611 are in the Lafayette “watershed” or drainage area).
- River Star Schools in the Lafayette watershed continued to grow with wildlife habitat and pollution prevention projects.
- Because of the strong response to start-up of the River Star Homes program, we are now shooting for a more aggressive 2014 goal— 1,500-2,000 homes. With 22,000 homes total in the Lafayette watershed, 2,000 homes will approach 10 %!



Citizen Action Scorecard: C

- A = 1,500- 2,000+ River Star Homes; 28 schools
- B = 1,000-1,499 River Star Homes; 21– 27 schools
- C = 500-999 River Star Homes; 14-20 schools
- D = 250-499 River Star Homes; 7-13 schools =
- F = Less than 250 River Star Homes; less than 7 schools

How the Community Achieved These Results

- **The Elizabeth River Project, Chesapeake Bay Foundation and more than 100 other partners developed a common plan** in 2010-11 to seek the goal of a swimmable-fishable Lafayette by 2014.
- **HRSD & City of Norfolk are making large-scale progress with massive upgrades to sewer systems** throughout the Lafayette River area to reduce the potential for aging, leaking systems to add bacteria to the river.
- **Twenty-two “River Star Businesses”** in the Lafayette “watershed” or drainage area participate with the Elizabeth River Project to reduce pollution and create habitat. The eight top-achieving “Model Level” businesses: **HRSD, Hermitage Museum & Gardens, Norfolk Environmental Commission, Norfolk Southern - Lamberts Point, Old Dominion University, US Maritime Administration - Atlantic Operations, Virginia Port Authority and Virginia Zoo.**
- **“Oyster reef balls”** were added to the Lafayette for young oysters as **Chesapeake Bay Foundation** continued to spearhead oyster restoration work underway for a decade on the Lafayette with multiple partners. A new reef is planned for 2012 with Elizabeth River Project, Chesapeake Bay Foundation, proceeds from RIVERFest, NOAA, FishAmerica Foundation and VA Department of Conservation and Recreation.
- Elizabeth River Project, the City of Norfolk and partners introduced the **new public festival, Lafayette RIVERFest**, on April 27, 2011—repeated April 28, 2012—to get citizens involved in restoring the Lafayette. More than 1,500 came the first year.
- **More than 600 River Star Homes signed up in the Lafayette area** to pick up after their pets, reduce fertilizer use and other practices in the Elizabeth River Project’s new program. Special thanks to HRSD, VA Department of Conservation and Recreation and National Fish and Wildlife Foundation for funding.
- **No less than 11 wetland restorations** have been carried out on the Lafayette in recent years by multiple partners including City of Norfolk, Lafayette Wetlands Partnership, Elizabeth River Project, civic leagues and many others. In fact – the



“Doodiful” dog owners have used 20,000 bags since Elizabeth River Project installed 20 Scoop the Poop stations in the Lafayette area in 2011. “That’s a lot of poop not going in the river,” says Doug Barnhardt at Doody Calls, who donates managing the stations.

City of Norfolk continues to lead South Hampton Roads in voluntary wetland restorations, most of them on the Lafayette River. The City's most recent project is a **large scale oyster/wetland habitat on Haven Creek.**

- The Elizabeth River Project worked with the City of Norfolk in 2011 to install **six innovative stormwater filtering systems – “tree box filters”** – around Colonial Place and Park Place (special thanks to VA Department of Conservation and Recreation for funding).
- The Elizabeth River Project installed **20 scoop the poop stations** to reduce pet waste in runoff around the Lafayette. Partner “Doody Calls” reports **20,000 bags** used at the stations during the year... a lot of poop not going in the river.
- New oyster surveys showed great promise on the Lafayette—Chesapeake Bay Foundation found **over 2 million oysters living in the Lafayette** and NOAA found large areas of bottom suitable for oyster restoration.



Lafayette Wetlands Partnership creates a “living shoreline” on Colley Bay, one of 11 recent wetland restorations on the Lafayette.

About this Scorecard

- This scorecard reports progress toward key goals in “The Plan for Restoring the Lafayette River, Strategies for Community-Wide Action,” published April 27, 2011 by Elizabeth River Project and Chesapeake Bay Foundation.
- More than 100 stakeholder groups were represented on the steering committee that developed the plan. At least as many groups – plus many more individuals – have played important roles in these historic results toward bringing back a healthy Lafayette branch of the Elizabeth River.
- Scores for bacteria and algae were developed by diverse area scientists and engineers with special thanks to HRSD, Old Dominion University, Virginia Department of Environmental Quality, Virginia Department of Health and the Technical Programs Committee of the Elizabeth River Project’s Board of Directors. Scores for public involvement were reviewed by the Public Relations and Education Committee of the Board.



475 Water Street C103A
Portsmouth, VA 23704

Contacts: Marjorie Mayfield Jackson; Joe Rieger
757-399-7487
www.elizabethriver.org

Cover photo:

Brown shrimp were among 22 species found in the Lafayette in 2011 during trawling by Elizabeth River Project, Chesapeake Bay Foundation, and NOAA