Residents who are making a difference through the collective impact of many personal changes.

**PEARL HOMES**
Restoring oysters, living shorelines, riparian buffers, and wetlands – all vital to the health of our waterways.

**RESTORATION**

**PEARL BUSINESSES**
Finding the double bottom line – good for business and good for the environment.

**GET INVOLVED!**

**PEARL COMMUNITIES**
People of faith who are committed to protecting our natural resources and making our community better.

**ADVOCACY**
A voice for the environment – working for good environmental policies on the local and state levels.

**PEARL SCHOOLS**
Inspiring and training the environmental stewards of the future.

ANNUAL REPORT 2015
DEAR MEMBERS,

We had one of my favorite LRNow events on December 6, our Annual Volunteer Appreciation Event. It was a 70 degree December day and we were able to enjoy delicious Lynnhaven oysters and beautiful views of the river from the deck of the Brock Center while we celebrated our amazing volunteers. What could be better!

During 2015, Lynnhaven River NOW completed 156 programs, involving 21,500 participants and logged 3,348 volunteer hours. And these numbers may all be lower than they should be because at times we are too busy to remember to add things to the log. But these accomplishments are only possible because of the amazing people who volunteer their time and talents throughout the year to clean up thousands of pounds of marine debris, to replant wetlands and shorelines, to help us build oyster castle projects, to educate the public at our events and other festivals and meetings in the community, to serve on our committees and board, to assist with program preparation and administrative work, and a thousand other ways that our volunteers make the work of LRNow possible.

We appreciate all of you and recognize that we could not do this without you. Thank you, thank you, thank you. To the left, you will see a few special people who were recognized for their volunteer contributions in 2015. We wish we could give everyone an award. We hope this annual report will give you a good picture of the work we accomplished in 2015 and a few of the things we are planning for 2016. Please note that you will find our Annual State of the River Report on pages 8–11. Throughout are overviews of each of our five major program areas: Pearl Homes, Restoration, Pearl Schools, Advocacy and Pearl Faith Communities.

This is a great time for you to consider how you may want to get more involved in 2016. Follow up on your New Year’s resolution, and become a member, come out to a cleanup, respond to a volunteer request or join one of our committees. Information can be found on all of our volunteer opportunities on our website and in our semi-monthly electronic E-News.

Thank you for all you do to restore and protect our natural environment.

Happy New Year,
Karen
Karen Forget
Executive Director

PEARL HOMES

2015 was another successful year for our growing Pearl Homes Program. More than 300 new Virginia Beach residences became Pearl Homes last year! A new Pearl Homes Committee was established and went right to work developing a sleek, more user-friendly Pearl Home Application.

2015 also marked the second year of our Native Plant program. Southern Branch Nursery’s Eric Gunderson provided us with more than 400 beautiful native plants which are now spread throughout residents’ gardens. We are looking forward to helping both of these programs grow exponentially during the upcoming year.

Lynnhaven River Now Monthly River Cleanups:

In 2015, 4,809 pounds (nearly 2.5 tons!) of trash were collected by volunteers in the community. These enthusiastic volunteers generously dedicated three hours of their time every second Saturday. Friendships were forged and new memories made at the monthly cleanups, where our wonderful volunteers absolutely embody stewardship for our Lynnhaven River watershed.

We are proud to announce Beach Garden Park as our newest Adopt-A-Program here in Virginia Beach. This means we will regularly take responsibility for cleanup of this waterway area.

“Never doubt that a small group of thoughtful, committed, citizens can change the world. Indeed, it is the only thing that ever has.”

-Margaret Mead
The winner of the new Pearl Home drawing for tickets to our 2016 Oyster Roast is CHARLES SILVERMAN of Lynnwood. Congratulations to Charles and to all of our new Pearl Homes. If your flag is faded or torn, please bring it to our office and we will give you a bright and shiny new one.
Schools Working Hard and Making a Difference

The word is out! It is now easier than ever to become one of the schools in Virginia Beach creating great environmental education lessons, becoming more sustainable and carrying our those great cleanups in and around the community. The Pearl School Award application is now on-line and we have added more ideas that mesh with the Standards of Learning to get the schools to their goals. This past school year, we awarded the Pearl School banner to 11 new schools, bringing the total number of Pearl Schools in Virginia Beach to 70, including our first ever Pre-schools: Old Donation Pre-school and Barefoot Kids Christian Day School.

Newtown Elementary School is one of those schools new to the Pearl School Award. They worked hard to earn that award by taking part in the Urban Tree Program. Through this city-lead program, they learned about trees and their importance to the environment. They expressed this knowledge and their feelings about trees through artworks from repurposed materials displayed at the National Green Schools Conference, and then planted trees on the school grounds. Many of the students attended the National Green Schools Conference and added their voices to the discussions held for students. In addition to the trees, the school added a Wildlife friendly garden which will feed and nurture many pollinators.

Independence Middle School is another of the new schools. Working closely with experts in water quality, birds, aquatic animals, plants and insects, a class of 7th grade Life Science students completed a one day assessment of life at Pleasure House Point Natural Area. This “bio-blitz” gave the students an opportunity to meet and work with scientists and naturalists in many different fields. It also gave them a glimpse of the treasure in their own neighborhood, Pleasure House Point, and what it had to offer to all who come to visit. Students then produced movies about the project areas and showed them to an audience of parents, students and the public at a special movie screening night. In addition, many other teachers and students helped win this award. They created artwork from repurposed materials that was on display at the National Green Schools Conference, participated in environmental workshops, started new recycling programs, executed Pearl Home and Scoop the Poop campaigns and supported a Green Club. Independence MS also participated in the Growing Wetlands in the Classroom and raised oysters. With all these efforts, Independence is really making a difference in the Lynnhaven River watershed.

First Colonial High School, a five year Pearl School, launched a new initiative to help earn their Pearl School Award points. The Green Club did research on the impact of plastic water bottles on the environment and came up with a plan to educate the other students and raise money to install a water bottle refill station in the school. First Colonial HS students also participated in the 2nd annual TRASHion Show at Lynnhaven Mall in February. The students came back to school with the coveted Principal’s Award for Excellence on and off the runway. They have already signed up to participate in the TRASHion Show on February 27, 2016.

Thanks to all of our Pearl Schools for making a difference in their schools and in their communities. If your school is not yet a Pearl School, please check out the website (http://www.lynnhavenrivernow.org/pearl-schools/) and start adding up the points. If you need assistance or would like to sit down with LRNow staff, please contact Jody Ullmann, Pearl School Coordinator at jody@LRNow.org.

Our Pearl School program began in 2007 with seven schools. Over the past eight years, it has grown very rapidly. In 2015, we had 71 participating schools.
LYNNHAVEN RIVER NOW PRESENTS THE
2015 State of the River Report

Is restoring and protecting our environment important? You know that we at Lynnhaven River NOW believe that it is. We prefer to call our natural environment our life support system because that may be a more appropriate way to think about it. We have clear reminders every day of the many ways we depend on our built environment. We wake up in a climate controlled home, dress in human designed clothing, prepare our breakfast in our human engineered and constructed kitchen, and this continues throughout our day. What we may not be as aware of are the many ways we are dependent on the natural world. The air we breathe, the water we use to bathe, brush our teeth, and make our morning coffee, the coffee itself and all of the food we eat, the materials to make our clothing and build our homes all come from our natural environment. And that is just the beginning.

Researchers are learning more about how important time in nature is to our health and well-being. People heal faster, students learn better, and everyone handles the everyday stress of life better when they have a connection to the natural world. How many of us take a walk on the beach or in a park or wooded area when we need to decompress or wrestle with a particularly difficult question or problem? Researchers are documenting all of the ways that a connection to the natural world not only makes us healthier but also supports clear thinking and problem solving. This life support system around us is vitally important, how well we are doing in caring for our natural environment is water quality. We have water everywhere and we love it. But how well are we taking care of it? Part of the answer to that question can be found in this State of the River Report. We are getting better all the time but many challenges remain. We are learning that every choice that we make has an impact. How can we lessen our negative impacts and increase our positive contributions?

As you read our 2015 State of the River Report, pay attention to the evaluations in each area, but also take note of the things that you can do to help us reach our goal of good water quality in our Virginia Beach waterways. Clean water is good for all of us and we can all be a part of insuring that we are leaving a clean and healthy natural world for our children and grandchildren. Nature is resilient and will work with us if we give her a chance.

With some gains and losses, our overall grade for 2015 remains a B-.

Thank You Mary Picardi
A special Thank You to Mary Picardi for her tireless work as our Public Policy Committee chair. Mary thoroughly researched issues related to water quality and protecting our environment at the local, state and federal levels. She spent much time communicating with our partner organizations, our committee members and our elected officials on issues that affected us locally. We appreciate all she did for our Public Policy Committee and for the awareness she raised to protect our environment. We are happy that Mary will be continuing as a committee member and want to thank her for her hard work serving as our committee chair.

ADVOCACY

Lynnhaven River NOW is actively involved in two local public policy issues and will be advocating for two issues in the General Assembly session this year.

ON THE LOCAL LEVEL:
Offshore Drilling poses huge threats to our waterways and beaches and all of the progress we have made to clean up our environment. It is not just the possibility of a disastrous spill that poses a risk, but the smaller spills that occur as a result of the day-to-day operations also foul the waters and kill wildlife. Oyster larvae is particularly vulnerable to oil and gas contamination. We are joined on this position by many other groups in Virginia Beach including the Restaurant and Hotel Associations and the Princess Anne and Virginia Beach Garden Clubs. We are all working together to have our concerns heard at the local, state and federal levels. We thank our City Council for resunding their support of offshore oil and gas drilling.

Extending light rail is the first step to a multi-modal public transportation system for Virginia Beach and our region will have multiple benefits including environmental benefits. Impervious surface does not allow water to soak into the ground when it rains and is a major component of water quality problems. Much of our existing and anticipated impervious surface exists to serve cars, roadways, driveways and parking lots. A multi-modal transportation system will reduce the need to add further impervious surfaces for cars. In addition, as much as 25-30% of the excess nitrogen in our waterways, a major pollutant, is air-deposited from vehicles. Reducing driving miles in our city will reduce the excess nitrogen that leads to algal blooms and dead zones in our waterways.

AT THE STATE LEVEL:
Climate change, sea level rise, and increased flooding are complex topics. But one thing we know in Virginia Beach is that dealing with rising water levels and more flooding is going to be both difficult and expensive. The Coastal Protection Act being sponsored by Delegate Villanueva offers a market-based approach to providing an ongoing source of funds for our region to deal with climate change and adapt to sea level rise. This legislation has been endorsed by our City Council and is part of the Virginia Beach 2016 Legislative Package.

Funding for the Stormwater Local Assistance Fund was eliminated from last year’s state budget and needs to be restored. The only area of pollutants to our stormwater sewer system to curb the flow of stormwater and the pollutants that it carries. The Stormwater Local Assistance Fund provides grant funding (on a 1/1 match basis) to assist localities in upgrading their systems. This funding is very important for Virginia Beach and we are advocating for $50 million in funding in 2016.

If you are interested in joining the Public Policy Committee, please contact Karen@LRNow.org.
BACTERIA

Bacteria testing is done regularly by the Virginia Department of Health, South Coast Sanitation District. There were no significant changes in 2015. However, to maintain 42% of the river at the shellfish standard required vigilance and commitment. Expanding open areas would allow more of our grasses to return and to reduce the excess nutrients entering our water. Oxygen are to reduce sediment runoff allowing our underwater grasses to thrive. The Virginia 303(D) list of impaired waterways lists 7.9 square miles of the Lynnhaven as impaired for dissolved oxygen. This constitutes approximately 90% of the river. The keys to increasing dissolved oxygen are to reduce sediment runoff allowing our underwater grasses to return and to reduce the excess nutrients entering our river and stimulating the growth of algae that both reduces water clarity and increases chemical oxygen demand. All marine animals require dissolved oxygen to live and thrive. Water quality can be improved through pollutions controls means that treat or reduce the sources of nutrients, sediments and bacteria before these pollutants reach the river.

NITROGEN & PHOSPHORS

Nitrogen and phosphorus are organic substances found in fertilizer, pet waste, organic materials such as grass clippings and leaves, and human waste. In the water, these nutrients lead to algal growth, clouding of the water, bacteria growth, and possibly toxins from algal blooms. Anecdotal evidence suggests that water clarity is improving, yet we still experience algal blooms in the summer months and water clarity is too poor to support underwater grasses. What you can do to help: reduce or eliminate your use of lawn fertilizers; reduce the turf area of your yard and replace it with native plant beds; plant a buffer garden between your lawn and the street or waterfront; use native plants in your landscape; plant a tree; never put grass clippings or leaves into a storm drain.

WATER CLARITY

Though anecdotal evidence suggest that water clarity in the Lynnhaven has improved, it is still inadequate. Water clarity is an important key indicator of the quality of the water and the health of our water column.

WATER QUALITY A

In 2015, $1,444,828 was spent on stormwater improvement projects in the Lynnhaven watershed. This brings the total since 2001 to $21.6 million, which has reduced the number of pollutants entering the river. The stormwater division has spent 95% of the budget allocated by HRSD. Every year, there has been an increase in the number of gallons handled responsibly and an increase in the amount of sediment that supports the growth of underwater grasses; it is still inadequate. Water clarity is a key indicator of the quality of the water and the health of our water column.

WATER QUALITY B

What you can do to help: reduce or eliminate your use of lawn fertilizers; handle sediments from any land disturbance properly keeping them out of the storm drain and reduce erosion; keep the gutter area in front of your home free of sand, leaves, and pine needles; plant a tree; never put grass clippings or leaves into a storm drain.

NEW FUND S FOR WATER QUALITY A

In 2015, we saw the new General Permit Application for Living Shoreline projects established by VMRC. In the Lynnhaven, 9 living shoreline projects were permitted in 2015. We are hopeful that the new permitting process will allow that number to continue to increase. In 2015, 10,403 square feet of wetlands were impacted by development, but 18,675 square feet of wetlands were constructed for a net gain of 8,272 sq ft. In addition, 1,665 square feet of floating wetlands were constructed.

EDUCATIONAL PROGRAMS A

Community education and outreach is the core of LNRnow’s work. Through our Pearl Home and Pearl Faith Community programs and our Pearl District program, we have engaged 8,161 people in 2015. The cumulative impact of all of our individual decisions is the reason for success or failure in restoring and protecting the river and our shorelines. Plant of the Month program was very successful in 2015 and continues to grow every month. We enrolled 382 homes in the River home program and saw an increase in our E-News and Facebook followers. Our Pearl Faith outreach continues to grow and the enrolled communities are completing inspiring projects.

MEMBERSHIP & INVOLVEMENT

In 2015, our members donated 3,348 volunteer hours to our work at LNRnow. We could not do what we do without your volunteers. Our community system continues to work to find new ideas and new ways to engage our members. We have over 50 volunteers committed to our various committees. Our volunteer members are also dependent on the media and donations from our members that financially support our work and help us to continue growing and getting stronger.

STORMWATER TREATMENT

Two stormwater projects were completed in 2015: the parking lot removals at Princess Anne High School on Thalia Creek and the stream restoration work on Mill Dam Creek. Four lake restoration projects have been designed and construction is planned for next year. Hill Farms.

STORMWATER TREATMENT B

What you can do to help: clean up spills on the river; never fill your boat’s tank more than ¾ full to avoid spills; use only non-toxic cleaning products and some of our homeowners to help resolve the conflicts that exist between the two groups of neighbors.

MEMBERSHIP & INVOLVEMENT

What you can do to help: become a member and support our Annual Giving Campaign; join a committee; become a Pearl Home; encourage your faith community to become a Pearl Faith Community; volunteer for one of our educational programs; become oyster gardeners; consider joining our spat catcher program; buy sustainably harvested local Lynnhaven oysters.

STORMWATER TREATMENT C

What you can do to help: become informed about legislation affecting our watershed; attend the Candidates Forum to see where your elected officials stand; talk to your city council representatives and your state legislators and senators about your interest in clean water. They need to know that you support efforts to restore and protect all of our waterways.

SANITARY SEWERS

In 2015, 2,500,000 gallons in 2015 as 2015 saw the first time in the 2015 saw the first time in the history of our program to complete all of our sanitary sewer projects for a total of 400 million dollars since 1998. The largest project was the new parks and recreation facility at lake Lawson opened in 2015 with additional projects.

SANITARY SEWERS A

In 2015, we enrolled 382 new homes in the Pearl Home program and saw an increase in our E-News and Facebook followers. Our Pearl Faith outreach continues to grow and the enrolled communities are completing inspiring projects.

SANITARY SEWERS B

What you can do to help: subscribe to LNRnow’s electronic newsletter; attend LNRnow’s events; volunteer for one of our educational programs; become a Pearl Home; encourage your faith community to become a Pearl Faith Community; volunteer for one of our educational programs; become oyster gardeners; consider joining our spat catcher program; buy sustainably harvested local Lynnhaven oysters.

STORMWATER TREATMENT D

Water clarity is a key indicator of the quality of the water and the health of our water column.

STORMWATER TREATMENT E

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STORMWATER TREATMENT F

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STORMWATER TREATMENT G

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STORMWATER TREATMENT H

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STORMWATER TREATMENT I

What you can do to help: become informed about legislation affecting our water quality; attend the Candidates Forum to see where your elected officials stand; talk to your city council representatives and your state legislators and senators about your interest in clean water. They need to know that you support efforts to restore and protect all of our waterways.
**POLLUTION**

<table>
<thead>
<tr>
<th>INDICATOR</th>
<th>2015 GRADE</th>
<th>2014 GRADE</th>
<th>WHERE WE ARE IN 2015</th>
<th>WHERE WE WANT TO BE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BACTERIA</strong></td>
<td>C+</td>
<td>C+</td>
<td>42% of the river meets the shellfish harvest standard; 91% meets the swimmable/fishable standards</td>
<td>100% of river meets the shellfish harvest standard and 100% swimmable/fishable</td>
</tr>
<tr>
<td><strong>NITROGEN &amp; PHOSPHORUS</strong></td>
<td>D</td>
<td>D</td>
<td>Nitrogen &amp; Phosphorus levels bring about summer algal blooms and prevent SAV</td>
<td>Nitrogen &amp; Phosphorus levels that meet SAV habitat requirements</td>
</tr>
<tr>
<td><strong>DISSOLVED OXYGEN</strong></td>
<td>D</td>
<td>D</td>
<td>7.9 impaired sq miles (approx. 90% of the river)</td>
<td>Zero impaired square miles</td>
</tr>
<tr>
<td><strong>WATER CLARITY</strong></td>
<td>F</td>
<td>F</td>
<td>Although anecdotal evidence indicates that water clarity has improved, it still fails to meet the standards for SAV in the summer months.</td>
<td>Sediment and Algal levels that meet SAV habitat standards</td>
</tr>
<tr>
<td><strong>CLEAN BOATING</strong></td>
<td>A-</td>
<td>A-</td>
<td>72% in effect; 8 certified marinas, annually increasing gallons pumped out</td>
<td>ND in effect; 8 certified marinas, annually increasing gallons pumped out</td>
</tr>
<tr>
<td><strong>NEW FUNDS FOR WATER QUALITY</strong></td>
<td>A</td>
<td>A</td>
<td>$3,444,828 were spent in 2015</td>
<td>$3 million per year</td>
</tr>
<tr>
<td><strong>STORMWATER TREATMENT</strong></td>
<td>C-</td>
<td>C-</td>
<td>24% of the stormwater in the Lynnhaven watershed benefits from stormwater treatment</td>
<td>100% of total watershed treated with stormwater management</td>
</tr>
<tr>
<td><strong>SANITARY SEWERS</strong></td>
<td>C</td>
<td>A-</td>
<td>7 sewer overflows; 20,060 gallons spilled; 196 septic tanks remaining, 11,600</td>
<td>Zero sewer overflows per year, 0 gallons spilled, 0 septic tanks remaining of 11,600</td>
</tr>
<tr>
<td><strong>OYSTERS</strong></td>
<td>A-</td>
<td>A-</td>
<td>203,195 oysters transplanted; 63 acres of sanctuary reef; 886 linear feet of oyster shoreline in 2015</td>
<td>250,000 oyster per year transplanted, 100 total acres of sanctuary reef, 300 linear feet of new oyster shoreline per year</td>
</tr>
<tr>
<td><strong>OPEN SPACES &amp; PUBLIC ACCESS</strong></td>
<td>B-</td>
<td>B-</td>
<td>3,104 acres of Open Space, 5 public access sites, New Lake Lawrence facility opened in 2015</td>
<td>Open space: 4,000 acres, Public Access: 15 Public Access Sites</td>
</tr>
<tr>
<td><strong>WETLANDS</strong></td>
<td>A</td>
<td>A</td>
<td>10,463 sq ft of wetlands impacted; 18,675 sq ft of wetlands restored; 9 living shoreline projects</td>
<td>Zero permitted losses per year, increasing number of living shoreline projects each year</td>
</tr>
<tr>
<td><strong>UNDERWATER GRASSES</strong></td>
<td>F</td>
<td>F</td>
<td>0 acres of underwater grasses detected in 2015</td>
<td>175 total acres</td>
</tr>
<tr>
<td><strong>EDUCATIONAL PROGRAMS</strong></td>
<td>A</td>
<td>A</td>
<td>156 programs in 2015; 12 Pearl Faith Communities; Fall Festival; Candidates Forum and various workshops</td>
<td>80 programs per year, 10 Pearl Faith Communities (5 new this year), Annual Fall Festival, Candidates Forum</td>
</tr>
<tr>
<td><strong>MEDIA ATTENTION</strong></td>
<td>A</td>
<td>A</td>
<td>Coverage 14 times in media; 6 new publications in 2015; 600 new Facebook followers; 502 new E-News subscribers</td>
<td>Coverage 18 times per year, 10 new publications per year, Facebook followers: 400 new per year, E-News Subscribers: 400 new per year</td>
</tr>
<tr>
<td><strong>MEMBERSHIP &amp; INVOLVEMENT</strong></td>
<td>A</td>
<td>A</td>
<td>Membership: 8,400; Involvement in 2015: 21,500; 3,348 New Pearl Homes in 2015: 382</td>
<td>Membership: 5,000; Involvement: 30,000; 3,000 Volunteer hours; Pearl Homes: 500 new per year</td>
</tr>
<tr>
<td><strong>SCHOOL PARTICIPATION</strong></td>
<td>A</td>
<td>A</td>
<td>71 Pearl Schools in 2015, 8 Teacher Trainings, Participation from all watershed schools</td>
<td>50 Pearl Schools, 10 Teacher Trainings per year, Participation from all watershed schools</td>
</tr>
</tbody>
</table>

**POLLUTION CONTROL**

**HABITAT**

- Last spring, we received a call from a homeowner who noticed that the shoreline of his new home seemed barren and was experiencing mild erosion. After scheduling a free shoreline consultation with us, there did not appear to be any reason why there was no healthy wetland vegetation. It appeared that the previous owner may have applied a systemic herbicide (likely Round-Up, which is incredibly dangerous for use near water), killing all the vegetation and leaving nothing but dead stumps and twigs.

We recommended minor limbing of trees along the shoreline to allow a bit more light to reach the shoreline, and planting wetland grass plugs, specifically Spartina alterniflora, or Smooth Cordgrass, and Spartina patens, or Salt Meadow Hay to repopulate the area with healthy wetland grasses. The family spent a couple days together outside, planting 1,000 plugs along their shoreline. After only three months (Jun-Sept), the results are spectacular! This shoreline will help provide a habitat to oysters, crabs, fish, birds and many other critters, in addition to aiding in nutrient removal (cleaner water!) and providing a barrier against shoreline erosion (good news for the homeowner!).

This project is proof that in some cases, the solution to an improved shoreline isn’t necessarily time-intensive permitting and expensive riprap or bulkhead installation. Every shoreline is unique however, and we’d be happy to look at yours!

**OYSTER CASTLE SHORELINES**

Oyster restoration continues to be one of LRNow’s priorities because the famed Lynnhaven oyster is a symbol of the river’s history and of the river’s renewed health. Oysters and the reefs they form provide habitat, water filtration, nitrogen removal, and shoreline protection in the Lynnhaven River. Last spring, we worked with several environmentally-minded waterfront homeowners to install oyster castles along their shorelines. These innovative structures are easily built by hand into any configuration. They protect the shoreline by baffling wave energy while they concurrently provide a habitat for oysters, crabs, shrimp, fish and other river species.

We have even seen sand accumulating behind the castles in our original oyster castle project (built in 2012) allowing marsh grasses to rebound with the added elevation and protection. Oyster castles do require a permit to install, but they are truly worth the investment since they benefit both the river and the property owner. Visit our newly installed demonstration project at the Virginia Aquarium and call us if you would be interested in creating oyster castles on your shoreline.

**WORLD RECORD-BREAKING!**

We also worked with the Green Teens to help plan and assemble the longest stretch of oyster castles ever built by teens! They assembled 30 oyster castles in just four days at Great Neck Park. This was quite a feat and an amazing exhibit of the strong stewardship these teens feel toward our river! We hope many baby oyster spat find homes at this "teen-made" reef and continue to clean and filter our water for generations to come.

**RESTORATION**

This year has been another successful one for restoration in the Lynnhaven, from relatively simple projects to world record-breaking projects!

**SIMPLE PROJECTS**

Last spring, we received a call from a homeowner who noticed that the shoreline of his new home seemed barren and was experiencing mild erosion. After scheduling a free shoreline consultation with us, there did not appear to be any reason why there was no healthy wetland vegetation. It appeared that the previous owner may have applied a systemic herbicide (likely Round-Up, which is incredibly dangerous for use near water), killing all the vegetation and leaving nothing but dead stumps and twigs.

We recommended minor limbing of trees along the shoreline to allow a bit more light to reach the shoreline, and planting wetland grass plugs, specifically Spartina alterniflora, or Smooth Cordgrass, and Spartina patens, or Salt Meadow Hay to repopulate the area with healthy wetland grasses. The family spent a couple days together outside, planting 1,000 plugs along their shoreline. After only three months (Jun-Sept), the results are spectacular! This shoreline will help provide a habitat to oysters, crabs, fish, birds and many other critters, in addition to aiding in nutrient removal (cleaner water!) and providing a barrier against shoreline erosion (good news for the homeowner!).

This project is proof that in some cases, the solution to an improved shoreline isn’t necessarily time-intensive permitting and expensive riprap or bulkhead installation. Every shoreline is unique however, and we’d be happy to look at yours!

**OYSTER CASTLE SHORELINES**

Oyster restoration continues to be one of LRNow’s priorities because the famed Lynnhaven oyster is a symbol of the river’s history and of the river’s renewed health. Oysters and the reefs they form provide habitat, water filtration, nitrogen removal, and shoreline protection in the Lynnhaven River. Last spring, we worked with several environmentally-minded waterfront homeowners to install oyster castles along their shorelines. These innovative structures are easily built by hand into any configuration. They protect the shoreline by baffling wave energy while they concurrently provide a habitat for oysters, crabs, shrimp, fish and other river species.

We have even seen sand accumulating behind the castles in our original oyster castle project (built in 2012) allowing marsh grasses to rebound with the added elevation and protection. Oyster castles do require a permit to install, but they are truly worth the investment since they benefit both the river and the property owner. Visit our newly installed demonstration project at the Virginia Aquarium and call us if you would be interested in creating oyster castles on your shoreline.

**WORLD RECORD-BREAKING!**

We also worked with the Green Teens to help plan and assemble the longest stretch of oyster castles ever built by teens! They assembled 30 oyster castles in just four days at Great Neck Park. This was quite a feat and an amazing exhibit of the strong stewardship these teens feel toward our river! We hope many baby oyster spat find homes at this "teen-made" reef and continue to clean and filter our water for generations to come.
Recreation and Oyster Farming

Many of you may be aware of the conflict between some of our homeowners and some of our oyster farmers. Lynnhaven River NOW is actively working to find a solution to this issue that will satisfy all parties. We have attended the community meetings, participated as a panelist in a community forum, spoken with many of the individuals involved, and proposed a committee structure for working through this issue. The Lynnhaven River is a public resource and it belongs to all of us. With consideration and compromise, we can balance recreational interests with thriving oyster aquaculture.

LRNow is starting its 14th year of work to restore and protect our Virginia Beach waterways. We have had some celebrated success in reducing bacteria levels in the Lynnhaven River including Broad Bay and Linkhorn Bay because of the cooperation of many residents and the City of Virginia Beach. In 2002 when we began our work, only 1% of the Lynnhaven met the rigorous Health Department water quality standard that allows oysters to be consumed from the water by humans. Many of these areas were closed as far back as the 1930’s because of pollution coming from the land. Today, 42% of the river meets that rigorous standard. This phenomenal progress is the result of community collaboration between the City, homeowners, students, citizens and environmental organizations.

LRNow with its partners, the City of Virginia, Virginia Marine Resources Commission and the US Army Corps of Engineers, has constructed 63 acres of sanctuary reef. These areas of restored reef are helping to rebuild our native oyster population and increase the water filtering capacity of the oysters in the river. Approximately 58 acres of that reef are in Linkhorn and Broad Bays. In addition, our oyster farmers have millions of oysters growing in Linkhorn and Broad Bays. These oysters are also helping to keep our waters clean.

All development on land increases pollutants in the water. In the Lynnhaven watershed, 38% of the land area is impervious surface, rooftops, driveways, roadways, etc. And 30% is managed turf. That leaves only 32% of the land area where rain water is able to infiltrate and be naturally cleaned by the soil and plants and not run off into the river carrying pollutants that must then be filtered from the water if it is to remain healthy. This is not unique to the Lynnhaven River. This is what affects water quality in all densely populated urban areas.

Many waterfront property owners have asked me what they can do to protect our waterways. The most important things that a waterfront property owner can do to protect the river from the pollutants are to install a living shoreline, plant a vegetated buffer between the developed area of their property and the edge of the water, convert turf areas to planted beds and stop fertilizing the turf areas on their property. A short boat cruise on the river and you will know this is not the norm. Much of our shoreline is hardened with bulkhead and turf grass proliferates and goes to the water’s edge. It will take a long time and much effort to change these conditions.

If we are going to have the clean and healthy waterway that we all desire, we need to increase our efforts to reduce pollutants from the land and keep a thriving population of oysters to filter the pollutants that will make it into the water.

Nothing that we have accomplished in the Lynnhaven River has been easy. Each step has taken the concentrated efforts of many, but we have surprised everyone with what we have been able to do. It has happened because we worked together. We can work together to deal with this challenge and come up with a solution that respects everyone's desires and manages this valuable resource in a way that allows for recreational use, allows for oyster farming, and keeps the river we love, clean and healthy. I hope that all parties will be willing to sit down together, listen to each other and work to find a compromise that will work for all.

Pearl Faith Community

“We received this world as an inheritance from past generations but also as a loan from future generations to whom we will have to return it.”

– Pope Francis, July 7, 2015

Our Pearl Faith family is growing! From the original five in 2014, there are currently 16 congregations in the process of becoming Pearl Faith Community members and 78 congregations involved in the Pearl Faith programming.

In the spring we hosted our first prayer breakfast where clergy from all faiths came to be inspired by the beautiful sunrise over the Lynnhaven River, learn from tours of the Brock Environmental Center, and hear comments by our special guest speaker, Lieutenant Governor Northam. This fall we cosponsored the Living Waters Interfaith Summit with the Chesapeake Bay Foundation, Alliance for the Chesapeake Bay, and Virginia Interfaith Center. This day-long event was planned to help people of faith learn how to protect our waterways and become better stewards of our common home. From the moving opening ceremony with procession to the riverbank, to the practical and engaging presentations, participants came away with many useful ideas. The summit was attended by congregations from all around the region and 90 government representatives. During the summer, several congregations came out to the Brock Center for fun and fellowship with educational picnics, tours, and green coffee hours after services.

With the increasing interest on the part of religious groups to merge environmental stewardship with spirituality, environmental groups are looking for ways to help. We have been invited to present several workshops on our Pearl Faith Community, to share what we have learned. Our wonderful congregations have come up with so many innovative ways to care for creation from beekeeping and native plant gardens, to solar panels and community vegetable gardens. In this New Year, we are so grateful for all of our faith partners and thank them for the many ways they are working to help. Please contact us if your congregation would like to know more about the care of creation, protection of our waterways, and how to join the faithful who are making a difference.
One of our three strategic objectives at LRNow is to educate and engage the community and partner organizations in this work of restoring and protecting our natural resources. With that in mind and inclusion as a strong organizational value, we revamped our Program Committee meetings last year to include not only our staff, board members, and committee chairs, but also representatives from many of our partner organizations and some key individuals in our community. We were excited to welcome these people into our discussions about issues that affect our natural environment in Virginia Beach.

Our new members include:
Bayfront Advisory Commission – Kal Kassir
Resort Advisory Commission – Laura Habr
Central Business District Association – Bob Miller
Chesapeake Bay Foundation – Christy Everett
Back Bay Restoration Foundation
Council of Civic Organizations – Dottie Hampton and Sam Reid
Council of Garden Clubs – Audrey Kelly
Virginia Beach Hotel Association
Bay Island Community – Bob Magoon
VB Public Schools – Tim Cole
Ocean Park – Wendy Vaughn
VB Parks and Recreation – Barbara Duke
VB Landscape Management – Frank Fentress
VB Environment and Sustainability Office – Clay Bernick
Audubon Society – Steve Coari
HRPCDC Go Green – Katie Culipher
VB City Arborist – Susan French
VB Parks and Recreation – Steve Herbert
Minerals – Chuck Guthrie
Aquaculture – Chris Ludford
VB Public Works – Melanie Coffey and Sue Kriebel
VB Public Utilities – Rich Nettleton
Coastal Resilience Research, ODU – Emily Steinilber

They are joining our LRNow Staff and Board Members and the Chairs and Representatives from our LRNow Committees:
PR and Marketing – Mary Reid Barrow
Oyster Restoration – Richard Serpe
Shorelines – Kevin DuBois
Stewardship and Access – Sid Vaughn
Pearl Homes – Darcy Stephan
Pearl Faith Communities – Rev. Tom Deppe
Public Policy – Wendy Vaughn and Ann Wright
Pearl School Committee – Ashleigh Cake

Our 2016 Executive Program Committee meeting schedule is:
Monday, March 21, 4-6 PM, Brock Environmental Center
Monday, May 16, 4-6 PM, Brock Environmental Center
Monday, September 19, 4-6 PM, Brock Environmental Center
Monday, November 21, 4-6 PM, Brock Environmental Center

All meetings are open to the public.
COMING IN 2016

PEARL BUSINESSES
What is missing from our array of Pearl Programs? Pearl Businesses of course. Through this new program, we hope to meet the needs of small and large businesses in Virginia Beach who want to green their practices and move toward more sustainable operations. That is the double bottom line—good for business and good for the environment. We know you can do both and we want to help you discover how this can work for you. Watch for information on how you can get involved.

LRNEXT
We are so fortunate to have a growing number of young professional men and women in Virginia Beach who want to make Virginia Beach their home and want to help shape the future of our city. They appreciate all the wonderful things about living in Virginia Beach and want to see our city grow and prosper without losing the beautiful beaches, clean waterways, open space, and connections to nature that make this such a special place to live and raise a family. In January 2016, we will be launching our new young professional board, LRNext, and are excited for the energy and inspiration they will bring.