

‘Art Aboard!’
The first season of
The Elizabeth River Project
LEARNING BARGE

design . making . reflection . stewardship



Inspiration on the Elizabeth River

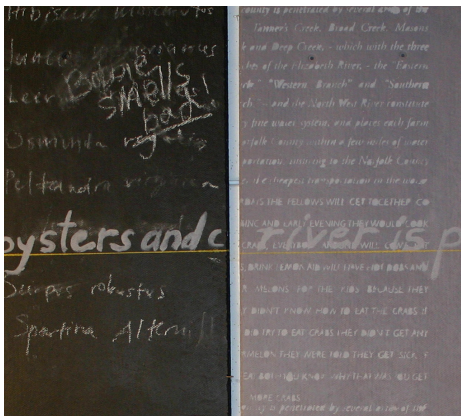
The Elizabeth River is a key tidal estuary in the Chesapeake Bay Watershed. Centuries of heavy use, contaminants, and runoff have polluted the waters that were once home to a diverse ecosystem. Dedicated to remediation and preservation, The Elizabeth River Project took on the challenge of cleaning up the river through a grassroots movement and educational initiatives. While collaborating with The Elizabeth River Project on a restoration proposal for Money Point, Crisman + Petrus Architects noticed there was limited public access to the river and active restoration sites due to private and governmental ownership. Inspired by the proliferation barges traveling along the working river, they envisioned a mobile environmental field station on a deck barge.



Designed by students at the University of Virginia in collaboration with The Elizabeth River Project, a local naval designer, and regional school teachers, the LEARNING BARGE was built the summer of 2009 and launched in September 2009. In addition to being an off-the-grid vessel with systems powered solely by the sun and wind, the BARGE is home to a rainwater filtration system, floating wetland, and a myriad of recycled, reclaimed, and ecologically friendly construction materials. As a demonstration tool and mobile field station, the BARGE traverses the important urban river that links Norfolk, Portsmouth, Chesapeake, and Virginia Beach. The BARGE will move to a new restoration site every few months, teaching participants about the tidal estuary ecosystem, wetland and oyster restoration, sediment remediation efforts, and the significance of the Elizabeth River as a major port. It is expected that this fully accessible Coast Guard certified vessel will be visited by nearly 19,000 people a year.



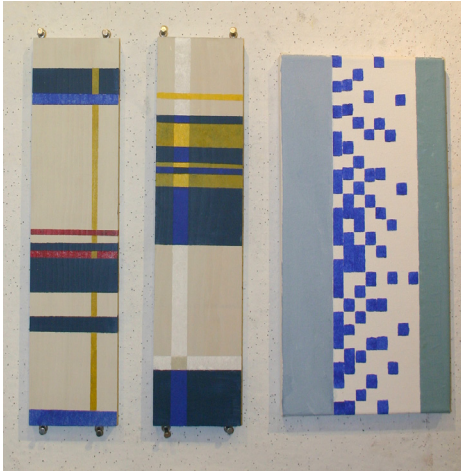
The core curriculum used on the vessel is aimed at grades K-12 and addresses issues of environmental stewardship through the lenses of science, history, sustainable design, and art. While on the BARGE, visitors of all ages learn how to help make the Elizabeth River swimmable and fishable by 2020.



Throughout the design, construction and implementation processes of the LEARNING BARGE, the Elizabeth River has served as a crucial source of creative impetus. Found objects, the color palette of industry and nature, and mixed typologies along the Elizabeth inspired works of art and fueled design decisions on the BARGE. Now, as a built object in its rich environment, the LEARNING BARGE serves as a community platform for visitors to find their own inspiration from the Elizabeth River.

Students: Laura Bandara, Kimberly Barnett, Erin Binney, Matthew Bower, Neil Budzinski, Kacy Burnsed, Adam Burton, Mary Butcher, Alessandra Calaguire, Lauren Catlett, Allegra Churchill, Kate Claeys, Katie Clinton, Ama Cobbina, Sarah Collins, Taylor Cooper, Andrew Daley, Eliza Davis, Kevin Day, Lauren DiBianca, Adam Donovan, Erin Dorr, Matthew Dreher, Zoe Edgecomb, Ayman El-Barasi, Ben Fey, Dhara Goradia, Erin Hannegan, Ginny Harr, Hamin Hashime, Kristen Henderson, Mary Herbert, Liz Hoogheem, Andrea Hubbell, Ivy Hume, Matt Hural, April Johnson, Elissa Kauffman, Daniel Kim, Sarah Kott, Sarah Kunkel, Kate Lafsky, Phoebe Larson, Daphne Lasky, Shanti Levy, Hy Martin, Kelly McConnaha, Emily Miyares, Marilyn Moedinger, Georgette Msambo, Anna Nau, Whitney Newton, Molly O'Donnell, Whitney Odell, Farhad Omar, Katherine Pabody, Su Park, Hadley Perona, Maressa Perreault, Graham Peterson, Kurt Petschke, James Pint, Laura Purvis, Anju Rathi, Jill Ringness, Rachael Robinson, Erin Root, Sarah Rosenthal, Ravi Sarpatwari, Tommy Schaperkotter, Robin Schick, Jamie Schwartzberg, Kristin Simpson, Rachel Singel, Jen Siomacco, Kate Spengel, Supriya Sudan, Ben Trudel, Clare Van Montfrans, Cara Warren, Nora White, Emily Williamson, Danielle Wilkens, Courtney Wright, Edwin Wright, Clarice Zusky

Faculty: Phoebe Crisman, Sanda Ilescu, Michael Petrus



Images shown (top to bottom): Shanti Levi, Whitney Newton, Rachael Singel

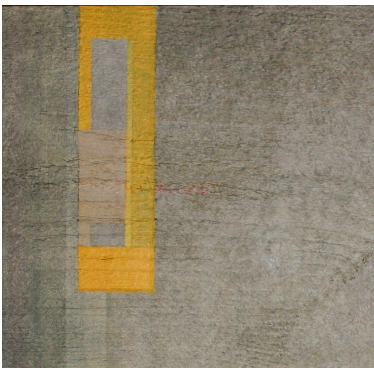
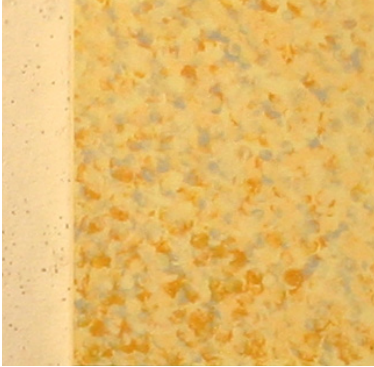


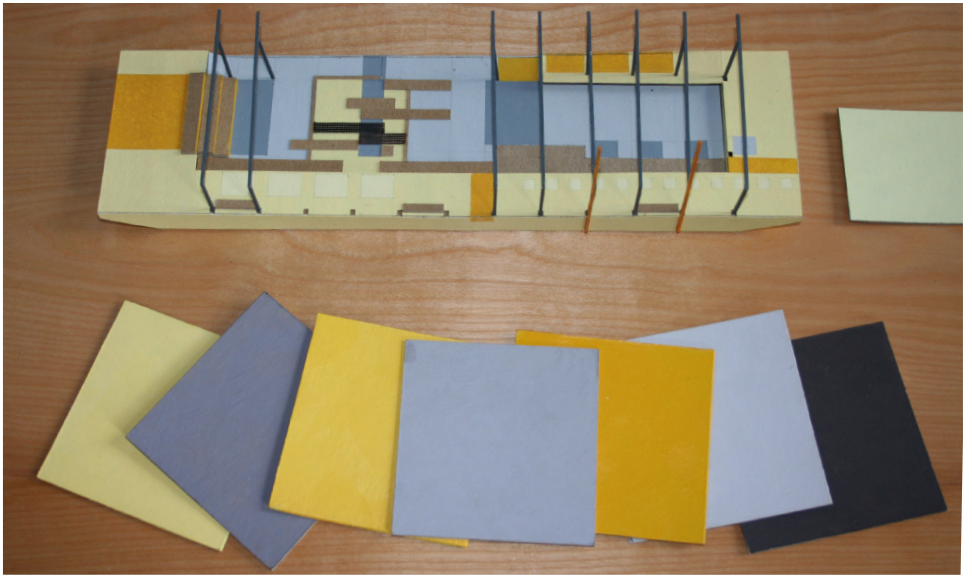
Painting the BARGE

Barges are common on the Elizabeth River, carrying goods, cranes, and serving as mobile housing units for the Navy. Typically, barges are painted with simple lines and dark colors. Wanting to make the BARGE stand out in the landscape, student designers and faculty at the University of Virginia investigated a variety of inventive painting schemes. The schemes explored different color palettes, painting textures, and the incorporation of text. Students in Sanda Iliescu's painting studio came up with four painting themes for the BARGE: Data, Poetry, Primary, and Sunny. The adjacent images represent the color scheme of the Sunny Barge. The use of two grey tones mirrored the color palette seen on many barges and ships traversing the Elizabeth, but the incorporation of shades of yellow brightened the scheme and introduced a unique vibrancy to the vessel. The diagrammatic model for the Sunny Barge also used fields of color to call attention to built features onboard such as the Storytelling Stairs. The scheme blurred the boundaries between inside and outside and used color to differentiate the upper and lower decks. Although the Sunny Barge scheme was the initial inspiration for the BARGE's final color palette, many aspects of the scheme were simplified due to the multiple layers of paint needed in the saline environment and complexity of cleanly painting edges around weld seams.

The BARGE was uniformly painted with light grey; the accent color of orange was used for the bits and yellow was used for the cleats as well as the stripes that wrap from the bow to the longest filtration basin and the stern to the yellow steel bench of the RIVER Lab. The five barn doors along Green Alley were also painted with the yellow and grey palette; each door is adorned with a horizontal stripe representing a layer of the river's ecosystem.

Paintings: Liz Hoogheem (bottom two), Erin Hannegan (middle two)



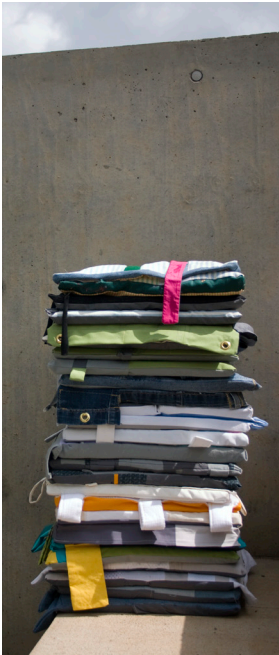


BARGE Pillows

In the Spring of 2009, Associate Professor of Architecture and Art Sanda Iliescu led a course on Painting and Public Art at the University of Virginia. Students in the course designed and fabricated cushions for the LEARNING BARGE. Although the BARGE is painted with light colors in order to reflect heat, the steel surface can still be very warm in the summer months. The cushions protect students from the hot surface and create a colorful field across the marine grey deck of the BARGE. Individually and in groups, the UVa students designed a number of 16" x 16" cushions, stuffed with a simple foam batting. Like the BARGE itself, many of the cushions were made from recycled materials, such as old jeans. Students explored various methods for sewing, folding, and weaving in order to create unique cushions with pockets, flaps, grommets, and ties. Each cushion can stand alone as a beautiful object or be connected to the others to create a brilliant quilt of comfort for visitors to the BARGE. In addition to individual 'sit-upons', two members of the LEARNING BARGE team from UVa made linear cushions for the RIVER Lab. Constructed of canvas and composed of the BARGE's grey and yellow color scheme, the four cushions bring a soft surface to the classroom.

Students: Lauren di Bianca, Ali Calaguire, Lauren Catlett, Kate Claeys, Kathleen Clinton, Dhara Goradia, Sarah Kott, Marilyn Moedinger, Clare Von Montfrans, Maressa Perrault, Erin Root, Supriya Sudan

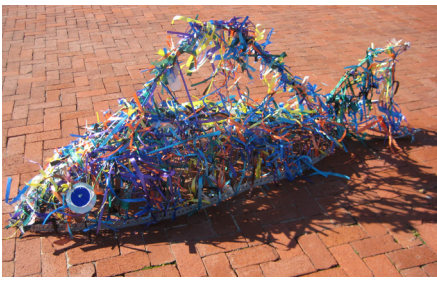




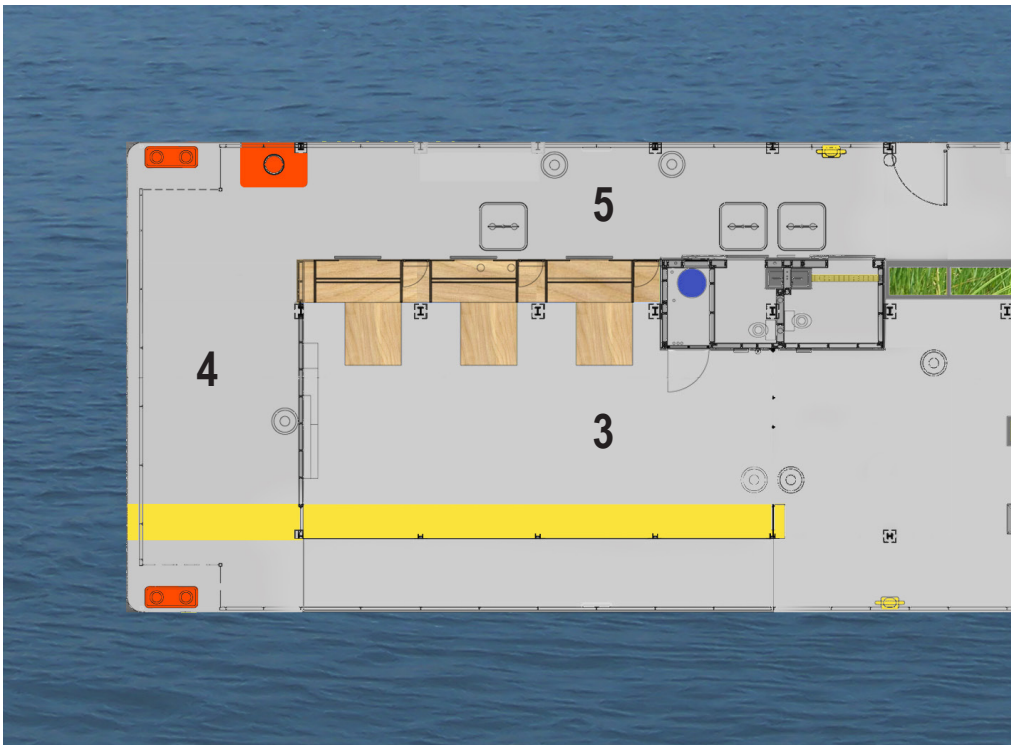
A New School

The LEARNING BARGE represents a new approach to education. In a world of testing and 'No Child Left Behind', the BARGE realizes bold statements like the Chesapeake Bay Foundation's credo, 'No Child Left Indoors'. The BARGE takes students out of the classroom and into nature, allowing them to experience the watershed first hand. Through the BARGE's unique design and adaptable curriculum, each learning station onboard highlights a key component of The Elizabeth River Project's mission to make the river fishable and swimmable by 2020. Students learn how to clean up the Elizabeth and prevent pollution. Through drawing and making, students explore the beauty of the Elizabeth River. They are inspired and challenged to become caring stewards of our natural landscape.

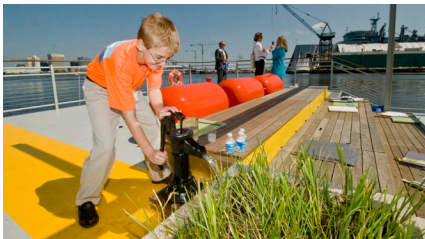
The mummichog, a small benthic fish, is the indicator species for The Elizabeth River. Since the mummichog does not migrate, the high cancer incidence of the fish has been directly linked to pollution in the river. Four sculptural mummichogs, made from aluminum, and recycled CDs and reclaimed bike reflectors, became the signature art pieces of the BARGE's first operational season. Students added pieces of ribbon and recycled plastic to enliven each skeletal fish as a woven mosaic. As finished pieces, the fish embodied the collaborative spirit of the LEARNING BARGE and were put on display for the public at the dockside of the Elizabeth River Project's office in Portsmouth, VA.



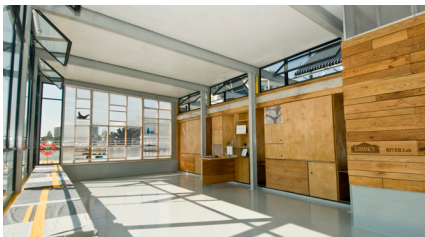




The first operating season of the LEARNING BARGE welcomed a diverse range of students from grades 1-12. Each field trip welcomed approximately sixty students to the BARGE. Divided into groups of ten, they rotated through six stations. By engaging in hands-on activities and environmental stewardship actions that can be implemented at school or at home, students learn how to support the swimmable/fishable goal for 2020.



1. FISHABLE River: students interact with creatures from the Elizabeth, like crabs, and learn how runoff is the number one source of pollution in the river. As a demonstration tool, the BARGE's water system helps students understand the importance of the concept, 'only rain down the drain'.



2. RIVER Roots: while exploring the BARGE's onboard wetland students learn how wetlands and oysters are natural filters that can help revive the Elizabeth River.

3. RIVER Lab: inside the BARGE's classroom students can explore 'green' materials and learn how chemicals, such as pesticides, affect the health of the river and lead to detrimental algae blooms.

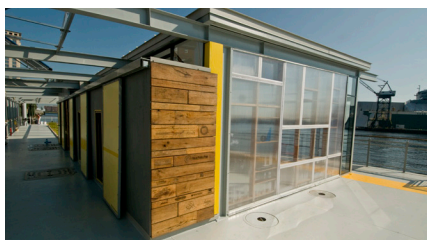


4. SWIMMABLE River: on the aft deck students discuss the importance of waste management, such as trash or pet waste, in relation to reducing bacteria levels and creating a healthy river.

5. GREEN Alley: students learn how using sustainable technologies, such as the solar and wind power systems on the BARGE, can help conserve energy and reduce pollution.

6. RIVER Art: students creatively express their experience with the Elizabeth River by drawing, painting, weaving, and writing. By using the river for artistic inspiration, students recognize the innate beauty of the unique natural and industrial landscape and learn to become conscientious river stewards.

The following schools helped make the LEARNING BARGE'S first season a great success: Arrowhead Elementary, Butts Road Elementary, Chesapeake Montessori, Christ the King, Crestwood Intermediate, Faith Academy, Georgetown Primary, Independence Middle, Kemps Landing Magnet, Larchmont Elementary, Nansmond Suffolk Academy, Norfolk Academy, Norfolk Collegiate Lower School, Ocean View Maritime, Ruffner Middle, Southwestern Elementary, Tallwood High School, the Williams School.



River Wishes

The art created onboard the LEARNING BARGE was intended to teach culture, foster expression, and encourage environmental responsibility. All of the artwork produced onboard was eco-friendly: students used natural materials and certain pieces incorporated reclaimed and recycled items. Many of the projects featured in this catalog also stressed the collaborative aspect of restoration and remediation. Students worked on art pieces in small groups then displayed their work both on and off the BARGE to inspire citizens to learn more about the Elizabeth River and what they can do to help support the swimmable/fishable goals.

At the conclusion of their field trips, many students made 'river wishes'. These small cards were adorned with the messages and drawings from individual students, each containing a vision of a healthy Elizabeth River. With their wishes in hand, students walked across the yellow bridge of the onboard wetland, a design feature on the LEARNING BARGE that connects the RIVER Lab with the Storytelling Stairs just as the Elizabeth River forms a bridge between the cities of Norfolk, Portsmouth, Chesapeake, and Virginia Beach. Once across the bridge, made from reclaimed grating, the students' wishes were floated in clear boxes in the seining pool of the onboard wetland.

The pool on the BARGE preforms a variety of operational, educational, and artistic functions. The pool is the only place on the BARGE where the collected rainwater and brackish water pumped from the river mix. Oysters and small creatures from the river often find a temporary home in the micro ecosystem of the pool. At the end of each field trip students gather at the bright Storytelling Stairs to share their experiences and observations on the BARGE. As part of the closing 'ceremony' to every BARGE field trip, students parade off the BARGE carrying items representing cultural traditions from global celebrations of water.



Spartina Tapestries

Wetlands are natural buffers for coastlines. Like many other tidal areas, development and boating have depleted the wetland grasses of the Elizabeth River. Without grasses like *Spartina*, the coastlines are more susceptible to erosion and the ecosystem are thrown off balance. The Elizabeth River project is dedicated to restoring the wetlands. The BARGE has a wetland onboard so that visitors can see how *Spartina* and other native grasses act as water filtration systems. Many students who visit the BARGE grow *Spartina* in their classrooms as part of the "Wetland in the Classroom" project by the Dollar Tree Foundation and plant the grasses at Elizabeth River wetland restoration sites. In addition, The Elizabeth River Project's River Star Schools initiative annually recognizes schools for conservation, restoration, and habitat enhancement projects. There are over 200 public and private schools in the watershed and currently 114 are River Star Schools.

While on the BARGE, students abstracted their observation of the Elizabeth's wetlands by using organic thread on burlap to create inventive *Spartina* tapestries. These large art pieces were then taken back to the classroom to be displayed, serving as a reminder of their time on the BARGE and the importance of the wetlands.

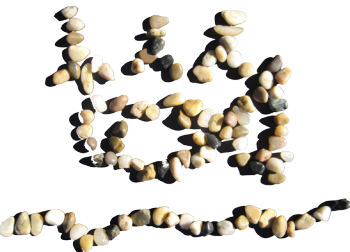


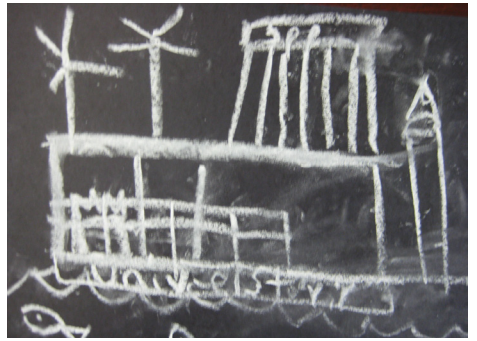
Temporary Art

Student visitors to the BARGE used large canvases, painted by UVa student designers with abstract watercolor scenes of the Elizabeth River, as background to create temporary art. Students used river rocks to create imagined landscapes and ecosystems. The rocks also inspired discussions about runoff and filtration techniques. Their creations were then photographed and used to illustrate narratives of the Elizabeth and its future. A large component of art aboard the BARGE was challenging students to explore the contemporary landscape but also envision a future of healthy eco-operations.

Picturing the BARGE

The LEARNING BARGE is a unique vessel on the Elizabeth River that uses design to mix technology and environmentalism. Students were given the opportunity to draw their interpretation of the BARGE while onboard, using chalk and recycled construction paper. Their drawings were displayed dockside for public view and gave a sense of individual experience: some students drew elements of the 'green' systems such as the wind turbines onboard while others focused on plants or structure.





Native Techniques

The Elizabeth River was named in the early 1600s for the daughter of King James the I of England, but the first residents along the shores were not European. The Chisapeack tribe lived along the river and called it the Chisapeake, which meant the 'plentiful shellfish and Mother Waters'.

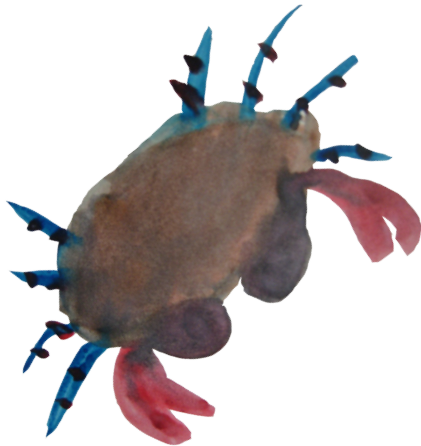
In a historiographic creative exercise, students divested themselves of modern cutting tools and used techniques similar to the Native Americans that once called the river home. Students tore scraps of tissue paper by hand into representations of the mummichog. The fish were then collaged on paper canvases to create colorful and diverse schools of fish. The once large and vibrant fish population of the Elizabeth River has decreased drastically since the time of the Chisapeack tribe. Fertilizers and other pollutants have led to algae blooms on the water's surface, essentially suffocating the fish below. Monitoring runoff and engaging in proper disposal methods can help revive the fish of the Elizabeth.



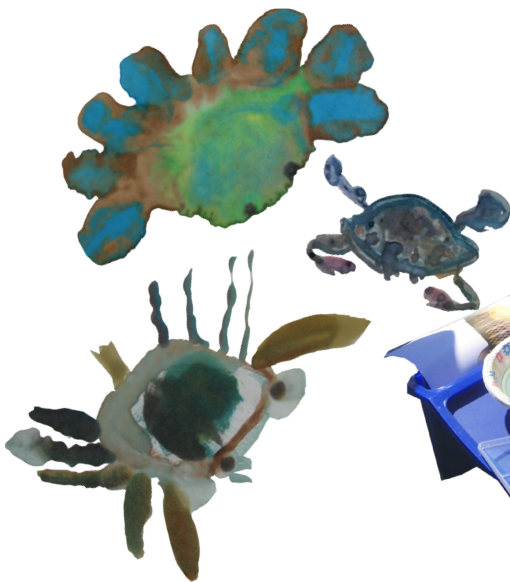
Testing the Waters

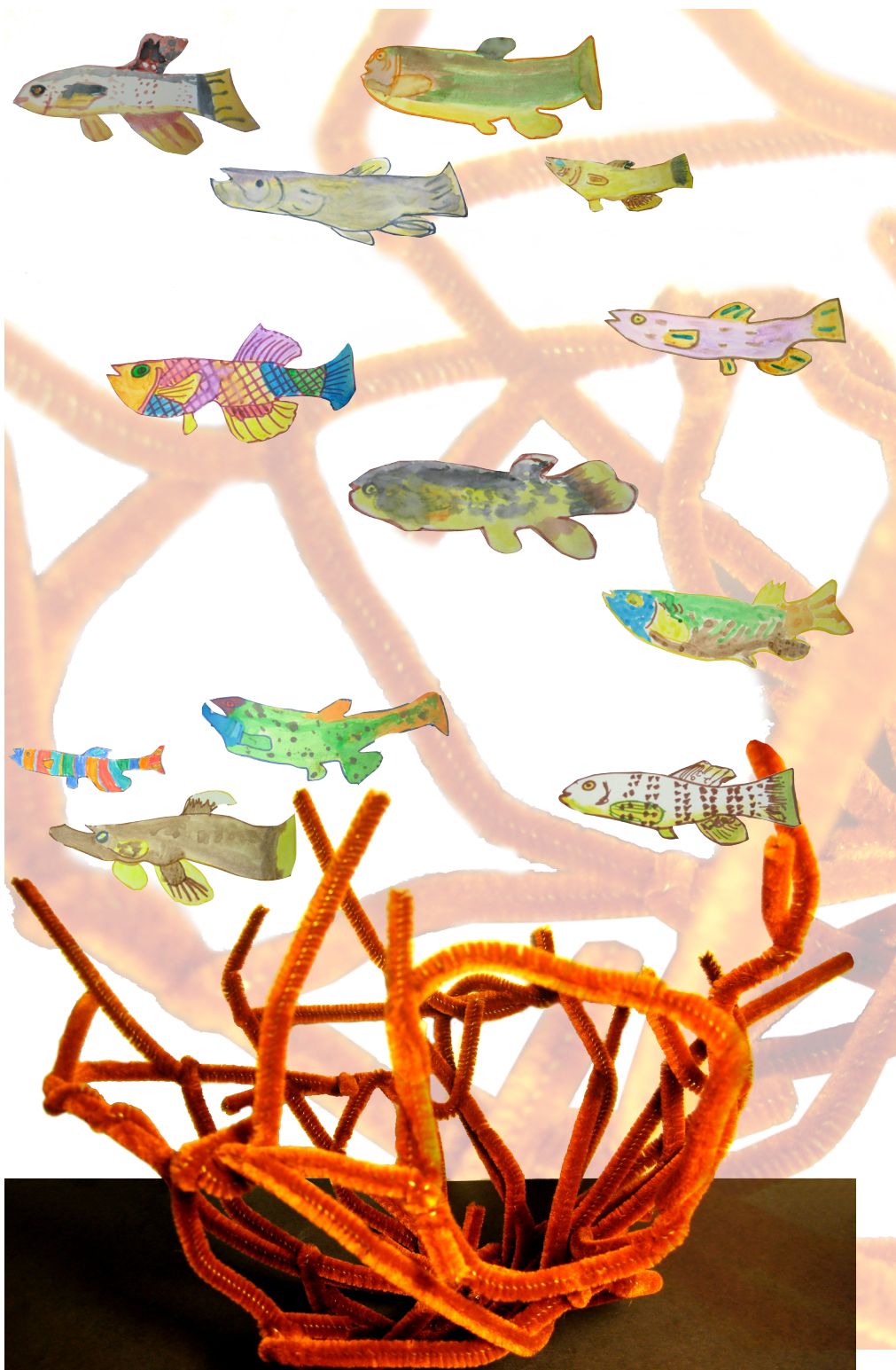
The Elizabeth River is home to many crabs; however, few students have interaction with these curious creatures. Collection boxes and habitat cubes are pulled out of the water near the bow of the BARGE, attracting various river organisms. During field trips to the BARGE, these boxes and bags are pulled out of the water and onto the deck giving students the chance to interact with the creatures living in the river's murky waters. Inspired by the crabs, students visiting the BARGE used harvested rain water and watercolors to paint images of the Elizabeth River's own army of decapod crustaceans. Painted on recycled paper, students drew crabs from live images and imagined creatures in vibrant hypercolor. Once a prevalent species in the Chesapeake Bay watershed, the health of the crabs, much like the health of the adjacent waters, has been in decline. The crab paintings were displayed on the dock-side of the BARGE for a period of time before they were sent as thank you notes to participants in the Elizabeth River Project's programs and donors.

The 'eco' watercolor technique was also used by students onboard to create a varied school of fish, featured in the following pages. In this catalog, water and air are united since watercolored mummichogs 'swim' among brown pipe cleaners that were used to make interpretations of osprey nests. Students presented their work to each other onboard and took their creations home as reminders of their time on the LEARNING BARGE.









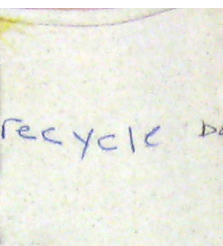




Plant woman
Caci



Recycle Woman



recycle



Eco shark



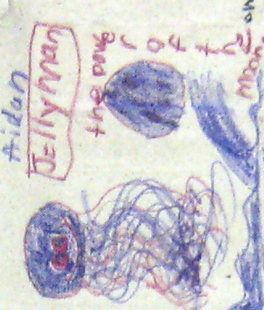
Water Girl



recycle Use the back of Paper!



Boub



JELLYMAN



PLANT GIRL



Captin recycle



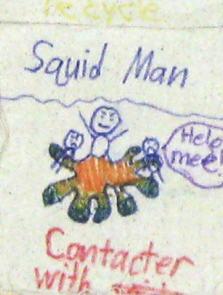
Bat Man



Aqua boy



Fish Lady



Help me!



Pan!!



Green Girl



I can bring you plants!



Earth Boy



Planet dude



Water Girl



Water Girl



Water Girl

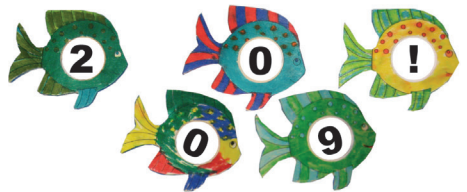


Water Girl

Reflections on the First Season

While on the LEARNING BARGE, students learn how small, environmentally conscious acts around their homes and schools can make big impacts on the ecosystem of their home river.

Many of the younger visitors to the BARGE imagined and drew 'River Heroes' on pieces of organic canvas. The individual pieces were affixed together to make a large patchwork quilt, such as the segment featured on the left. Although Mummichog Girl and Captain Recycle are inspirational stewards, the true heroes are the residents and friends of the Elizabeth River that do their part everyday to clean and preserve the delicate ecosystem.





**NATIONAL
ENDOWMENT
FOR THE ARTS**

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For more information on the **LEARNING BARGE** and **Art Aboard** go to:
www.elizabethriver.org



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