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Biggz Kidz: Connecting Children to the Urban Forest

Alicia L. Thomas, Biggz Kidz, Baton Rouge, LA



To kick off the inaugural Biggz Kidz class, children and parents introduced themselves by each selecting a favorite tree in the park and sharing the reasons behind their choices. This introduction allowed participants to explore their existing connections with urban trees and with nature in the city. Children are already familiar with the urban forest. They may know it as the trees in their yards, at their schools, in parks, and even along city streets. Often, the extent to which urban trees directly benefit people is not known. Awareness of urban forest benefits may encourage richer attachment to urban environments and promote environmental/community stewardship.

Biggz Kidz is an urban forestry education program based in Baton Rouge, Louisiana – a city with one of the largest urban forests in the country. Urban trees provide a wide range of environmental and social benefits and services to cities. Careful management is required to maintain the health of urban forests. Sustainable urban forests and sustainable communities go hand-in-hand, and community support plays a critical role in urban forest management. Biggz Kidz aims to increase community support by encouraging deeper connections to the urban forest through education, outreach, and community-building.

Biggz Kidz was founded in 2014 by Biggz Professional Tree Care and the YMCA of the Capital Area in a partnership that combines urban forestry knowledge with experience in youth programming. For its pilot year, the program currently offers monthly classes for children ages 4-6. The program's targeted age range is based on evidence that introducing environmental education during early childhood can encourage lifelong environmental stewardship and can also benefit critical areas of childhood development. Additional age groups will be added yearly with the goal of participants returning each year to build a lasting relationship with Biggz Kidz.

The curriculum, developed in collaboration with local universities, focuses on experiential, outdoor lessons that are team-taught by trained volunteer instructors. Class locations change to different YMCA branches throughout the city to provide opportunities for students to explore the many components of Baton Rouge's urban forest. To maintain lesson concepts and to keep in contact with participants during the month between classes, the Biggz Kidz curriculum also includes take-home projects and social media activities. An annual ceremony is held at the end of the year, and various awards (e.g., a free pass to a YMCA program of their choice) are distributed to participants based on their performance in the program.

Throughout the year, Biggz Kidz gathers feedback from children, parents, instructors, and other stakeholders to ensure that the program continues to best serve the community. The feedback is reviewed and incorporated into program changes and curriculum development for the upcoming year. Future programming goals for Biggz Kidz include classroom presentations, educational resources available to educators, online/mobile activities, and collaboration with other community agencies.

Photo Credit: Katie Hope, Biggz Kidz

Rural to Urban: Connecting Volunteer Experiences to the Urban Environment

Allison T. Williams, Appalachian Trail Conservancy/Mobilizegreen/Forest Service, Asheville, NC



On a rainy (or sunny) Saturday you can find volunteers from Georgia to Maine spending countless hours cleaning out water bars, repairing/widening tread, and using the crosscut or chainsaw to putting a fresh new white blaze on a tree trunk. These are volunteers on the Appalachian National Scenic Trail and part of the 31 trail clubs that maintain 2,189.2 miles of trail.

The trail connects many to its rural and solitude experience, but how many people really know about the Appalachian Trail? The trail is known internationally but trail towns have experienced even their own not knowing that this national scenic trail runs through their backyard. That leaves a huge task not only for the management partner, the Appalachian Trail Conservancy, but also for its 31 volunteer trail organizations that maintain this continuous footpath.

I would like to highlight the success of the Georgia Appalachian Trail Club bringing the tools that make them successful into the urban environment, and connecting urban dwellers with the tools of the trade. This group works with many school groups and youth organizations in the North Georgia and Atlanta area, but how do they bring hands-on experience to the urban audience? A crosscut saw! The group has developed a crosscut saw demonstration that anyone can try.

The participants get to try their hand in making a fresh tree cookie that they can take home. They learn that it is not easy and takes lots of energy, and also learn about something they did not even know existed. Through introducing this tool people become engaged and want to not only try but learn how they too can use this tool more than once. The tool opens up conversations about volunteerism, Leave No Trace, the Appalachian Trail and what is thru-hiking.

Through this educational tool the audience learns about what is a wilderness and why mechanized equipment cannot be used. There are so many educational points that are learned through one tool that educates people who live near urban forests.

Environmental Commitment: Global to Local

Analiese Smith, Keep Greater Milwaukee Beautiful, Milwaukee, WI



What was the last thing you threw “away” in the recycling bin? Where *is* away and what is it like? The din of machinery makes talking almost impossible. The constant sound of metal cans falling almost becomes white noise. Employees stand along numerous conveyor belts whipping materials off of the lines that are filled with paper, bottles, cans, and jugs. Fifteen students in bright blue hard hats are glued to a one-foot square window in a huge metal box that uses lasers and puffs of air to sort plastics by color and number. The tour guide smiles and tries to get everyone to move on to see the baler before the kids head back to the education room, but the kids have a hard time pulling themselves away.

Keep Greater Milwaukee Beautiful (KGMB) has been promoting sustainable living since 1983. Located in the heart of Milwaukee’s industrial center, KGMB connects youth to their environment to cultivate problem solvers and active stewards of the land, air, and water. In addition to supplying 60,000 cleanup volunteers each year, KGMB works with the city of Milwaukee to promote waste reduction and recycling through a variety of programs and tours of the Materials Recovery Facility. Sustainability and concepts of environmental justice are at the heart of every program. Students are constantly challenged to take ownership of their choices and habits and to explore how they can be more environmentally conscious.

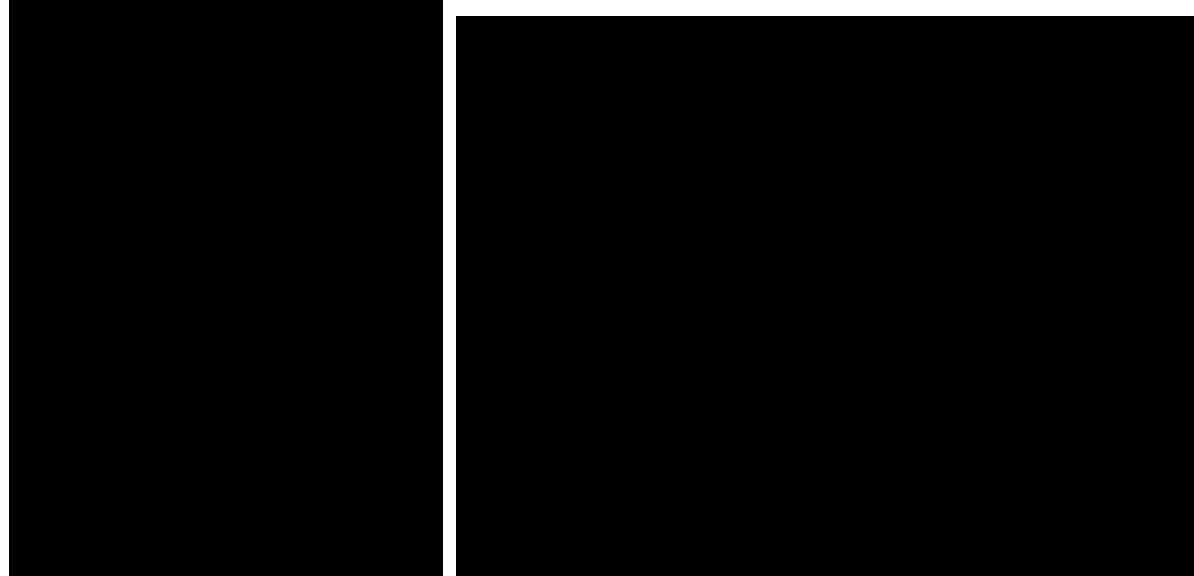
The tour group settles back into the education room. *Now that you’ve seen the recycling facility, what will you do differently?* Students have spent 12 class sessions learning about natural resources, waste, and sustainable packaging and have designed their own package to protect a potato chip as it is put through a series of tests. Conversations turn to making sure their packages are easily sorted and separated and use the least amount of materials. Students also talk about how they will be sure to recycle more of the correct materials and one student vows to encourage his family to stop burning their garbage. Students make observations about the waste hierarchy, predictions about recycled products, and debate related case studies. Everyone is encouraged to pick one new habit to start relating to one of the 5 R’s – reduce, reuse, recycle, rot, and rebuy.

How can you save the rainforest? Recycle that can! Once students see the local impact of the 5 R’s they are challenged to think globally. Students learn about the natural resources that are used to make their stuff and how the continual gathering of those natural resources can positively and negatively affect the economies, environment, and people of other areas of the world. Students travel to the heart of Africa to gather coltan for their cell phones and to the Brazilian rainforest to mine bauxite for their aluminum cans. Even though it is not a literal trip around the world, students come back changed.

KGMB works with over 4,000 students each year to explore energy and water conservation, environmental STEM, urban plants and gardens, and the 5 R’s. Each program asks that students make one new environmental habit with their new knowledge, because although a change might be small, the change in one’s environmental consciousness may be huge and these small changes of habit can grow to have a positive, lasting impact that is global in scale.

Taking Liberty: Refreshing Richmond Hill

Anandi A. Premilall, SustyQ (Sustainable Queens), Queens, NY



What makes a community great? Some say it is design, which admittedly does play a major role in how we interact with the spaces around us, but first and foremost, we need to consider the people who live, work and play in the area, for it is they who make a community what it is, for better or for worse. When I started looking at what was good (and not so good in my neighborhood), and could not find any local environmentally focused organizations taking action in the areas of Art, Wellness and Ecology, Sustainable Queens (SustyQ) came into being. What better way to promote health and community engagement by integrating artistic creativity, holistic wellness practices, and ecological principles of building healing spaces? Finding others who cared as much about doing something was a challenge in itself; maneuvering around post-slavery communities, land use, urban agriculture and immigrants who didn't want to be seen touching dirt or picking up garbage became a valuable lesson in persistence and perseverance.

It is no surprise to residents of Richmond Hill that Liberty Avenue is not the greenest or the cleanest place to shop or simply stroll around. When stepping off the A Train on Lefferts Boulevard and looking out on this busy shopping area, one is greeted by both the sight and smell of garbage. It can be said that this town is as rich in culture and diversity, as it is rich in organic and inorganic waste. After documenting trash along ten blocks of Liberty Avenue, it was evident that the garbage bins were overflowing with household waste and single-use containers from fast food restaurants. This was a call for community-wide education on waste, recycling and composting, as well as loving care for the neighborhood, by the neighborhood. One way to do this was 'beautification' and tree care. We requested for new street trees to be planted along this corridor and MillionTreesNYC accepted. Trees tie directly into urban environmental education because they provide permeable green spaces for mitigating stormwater through their root structure to ease the effects of flooding from combined sewer overflow.

SustyQ's Taking Liberty project was designed specifically to address and refresh the environmental and community challenges of Richmond Hill while participating in Coro Immigrant Civic Leadership Program. People of all ages and ethnicities who never knew each other were excited to hear that the place they loved was getting the attention it needed, and they signed up to help pick up trash, weed tree beds and plant daffodil bulbs. While we were not sure if the flower would survive Hurricane Sandy, the following spring, their yellow heads triumphantly popped out of the ground as we took our brooms to the streets. Nothing is more beautiful and magical than these first signs of life – tiny shoots of green popping out of the ground to restore hope and continued care for the environment from the community. Flowers are great companions in a tree bed as they signal the need for watering and weeding. In urban environments, their presence offers both beauty and function. Youth from an after-school program working on a leadership project to clean up Liberty Avenue invited me to share and offer expertise in environmental activism. I suggested fun, low-cost and practical ideas such as using social media to create a buzz about what they care about, designing educational signage, and a bit about the art of guerrilla gardening. By learning the rules of what they can and cannot do, they can dream about creative ways to bend the rules and take matters into their own hands. By Taking Liberty, SustyQ continues to put the 'AWE' in awesome.

Ranger programs: Connecting the community with nature in their park

Anna Hjelmroos, Wolf Trap National Park for the Performing Arts, Vienna, VA



If you live in the Washington, DC metro area you might be surprised at how many National Parks there are in your neighborhood. Not only are there large woods that you can hike through, there are also historical monuments, war memorials, the National Mall, aquatic gardens, and a historic amusement park. One small park that often gets overlooked is Wolf Trap National Park for the Performing Arts, or Wolf Trap for short. Many people come here for shows but pay little attention to the natural part of the park or its status as a National Park. One of the missions of the park is to connect its visitors with performing arts and their natural surroundings and one method for this is the kids program called Children’s Theatre-in-the-Woods. For six weeks in the middle of summer, hundreds of kids come every day to experience their favorite performances by family bands, ballet groups, and puppet shows – and afterwards play in the creek or have a picnic.

One daily activity that is available after the performance is a variety of ranger-led programs. There are usually two programs to choose from every day, one related to the performance and one related to nature. These programs aim to connect the kids with concepts from the performance to their daily lives, and also have interactive activities such as hiking, drawing and coloring, making puppets, singing, or dancing. Successful programs include the backstage tour of the kids theater, where kids and parents get to see the behind the scenes of the theater: how it feels to be on stage, where the performers change into their different costumes, and a look at all the audio equipment that is necessary for a production.

Another popular program explores insects and their importance in nature. The kids talk about and draw their favorite insects with a little help from the ranger who reminds them to make sure that they have enough (but not too many) legs, and other insect parts. Kids make art works of the life cycles of insects or food webs of animals that they have seen in the park, which they can take home. For especially young children, the song “Head, shoulders, knees, and toes” has been adapted to insects to become, “Head, thorax, abdomen” with varying interest. A new aspect that will be tested out this summer is working on an insect survey with the program participants. The kids will have a visual checklist of different types of insects to check off (or color) during a short hike around a native meadow and through a wooded area. The other side of the page will have a list where the kids can record what they saw, in what habitat, and what the insect was doing. Back at a picnic table the group will then talk about their findings, why insects are important in nature, and what kinds of flowers they could plant at home to encourage more insects. This data will then be photographed by the ranger and entered into a database to see what trends are present throughout the summer.

Connecting with urban youth in these ranger-led programs can be difficult. The demographics that commonly take advantage of these programs are stay-at-home parents, grandparents, and sometimes nannies with their charges. Many kids are ready to go home for lunch or their nap directly after the performance, and thus do not stay for the extra programs. The third group of kids is large camp groups that usually have a set schedule to stick to-- they might have their lunches on the bus or they might need to get back to the camp quickly. Although the performance seating can accommodate up to 800 kids, these programs work best with up to thirty kids, making logistics difficult if the park wants to reach out to bigger groups. The kids that do participate tend to want to stay and interact for longer than the 30 minutes, and frequently come back and do the same program again during the summer. Throughout the school year there are also ranger-led programs for 6th–12th grade that aim to connect youth to nature. These programs focus more on making observations in nature using all the senses and talking about ecological concepts and how students can make a difference in their neighborhoods and ecosystems.

Candlestick Point Eco-stewards: Building Resilient Habitats and Communities

Carli Baker, San Francisco, California



Just south of Candlestick Park, the newly vacated and semi-demolished ex-home of the San Francisco 49'ers, lies Candlestick Point State Recreation Area, the first California State Park developed specifically to bring “state park values into the urban setting.”¹ Located in Bayview-Hunter’s Point, one of San Francisco’s most industrial and underserved neighborhoods, Candlestick Point gives neighbors, visitors and volunteers a glimpse into the plant communities and natural habitats that were present in San Francisco before Spanish colonization in the 18th century.

The Candlestick Point Eco-stewards (CPE) program is a project of Literacy for Environmental Justice (LEJ), which strives to address the inequality in public access to open space through ecological restoration, community engagement and public education.² CPE engages with the community in a variety of ways including public workdays, high school field trips in partnership with the San Francisco Department of the Environment, as well as a teen stewardship program, Bay Youth for the Environment. CPE also operates a native plant nursery and garden, which allows for volunteers to gain gardening experience while cultivating a large number of native and locally appropriate plant species, many of which are no longer widespread in the area.

Through active ecological restoration, both on the Point itself and the nearby Yosemite Slough, CPE asks the community to actively shape their environment, and invites them to create the types of natural areas they want in the community. At the end of the high school field trips, one of the docents, Noxim, sits the class down in the shade and invites them to share their thoughts or feelings about the day. One student thought quietly for a second and then said, “I liked the planting. I enjoyed learning about the native plants and helping this area grow more beautiful because of our work.” It is that mindset, using one’s body and time to help reinvigorate an area, which is what makes CPE such an important resource for the people of Southeast San Francisco.

¹ California State Parks, “Candlestick Point State Recreation Area,” http://www.parks.ca.gov/?page_id=519

² Candlestick Point Eco-stewards, “<http://www.candlestickconnect.org/>”

*all pictures taken by Carli Baker

Bike to Boat: Connecting Residents with their Neighborhood Waterways

Carolyn Waters, Bike to Boat, Louisville, Kentucky



You could spend your Saturday afternoon brunching at a restaurant or working in the yard, but why not do something more adventurous just as close to home? In Bike to Boat, participants can coast downstream along their neighborhood creek by bike, then hop off at the creek's mouth and jump into a canoe, paddle upstream to experience a new perspective, and visit a local brewery to discuss the experience on their way home.

Beargrass Creek drains over 60 square miles of urban Louisville, Kentucky. The Middle Fork in particular connects Cherokee Park, one of our largest urban parks, to the Ohio River. Like many urban creeks, meeting and maintaining water quality standards is an ongoing challenge for the city, and educated residents can play a large part in offsetting the damage that occurs. In this region, thunderstorms with heavy rain are common. Many residents already know that storm water causes problems like flooding; they have experienced water damage in their homes, or had difficulty traveling due to flooded roads. Most residents also know that swimming, fishing, or any kind of interaction with urban creeks can cause health problems, but they may not be aware of the sewage overflow that occurs during storms, nor the impact that it has on communities from here to the Gulf of Mexico.

Bike to Boat will debut in May 2015. Up to twenty-eight participants will ride and paddle together for a four-hour urban excursion. Participants will be adult, beginning to expert cyclists, with a broad range of place connection to the city. Many of them have a demonstrated interest in community improvement. Depending upon the program's success and greater community interest, future excursions may include a broader range of audiences.

Through experiencing the geography of Beargrass Creek by bike and canoe, participants will:

- Understand the roles they play in relation to water quality issues they may hear about in the news;
- Experience the contiguous habitat this creek creates for non-human species;
- Discuss the history and future of transportation in Louisville.

Bike to Boat creates a new partnership between two existing organizations: Bicycling for Louisville (B4L) and Get Outdoors Kentucky (GOKy). B4L advocates for bicycle infrastructure and promotes bike activities in urban Louisville. GOKY provides voyageur canoe trips for groups and local decision makers on urban waterways.

Photo credits: left Mary Beth Brown, right Carolyn Waters

Maryland Community Naturalist Network (MCNN): Don't be a tourist in your own neighborhood

Ela Carpenter, MCNN, Baltimore, Maryland



Imagine if you were to visit a Masai village and be given a tour of their land; that Masai tribe member would probably be able to tell you every animal, bird, and plant you saw or heard. Now imagine if someone from the Masai tribe came to your neighborhood and asked you to show them around... Would you be able to tell him or her which birds are singing in your neighborhood, what plant that is growing by the sidewalk, or what type of tree that is growing next to your house? Or would you, in a sense, be a tourist of your own neighborhood?

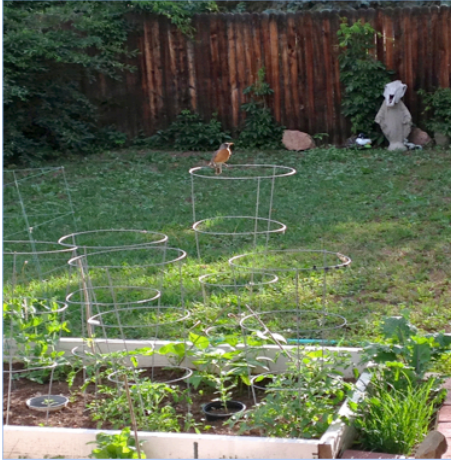
MCNN is a project of the Natural History Society of Maryland. The goal is to create nature mentors within each neighborhood, to promote sensory awareness and place knowledge, and to foster a connection to nature in the city. Participants include volunteers with various levels of expertise in natural history – everyone from beginners to experts in plants, birds, mammals, and geology, offering a wide variety of expertise and learning opportunities. The pilot program began in 2013 in collaboration with Baltimore City Recreation & Parks and therefore focuses on Baltimore City. Since then, the group meets once each month in a different Baltimore City neighborhood or park to explore and discover together.

For several hours each month members learn to identify one focal area of natural history (i.e. botany or geology), and also look at anything interesting that is observed beyond that focal area, such as bird calls, mammal tracks in snow, and wildflowers. The founders of the MCNN, Charlie and Linda Davis, often use a technique called coyote mentoring to help members identify what they are seeing. Coyote mentoring encourages the learner to make observations using all the senses and to look for unique properties or patterns. The teacher may ask questions that lead to further exploration before identifying the natural object or sharing its natural history. Storytelling and local city history are also used as learning tools, and members are encouraged to take notes, sketches, or photographs to help them learn. At the end of each meeting everyone shares one new thing they learned, and are encouraged to document and share what they learn with neighbors to help retain community memory of nature in neighborhoods. Photos and comments on the trip are also shared on the group's Facebook page afterwards, which allows discussions and learning to continue beyond the monthly meeting. As of 2015 there are approximately 35 members of MCNN from 35 neighborhoods within Baltimore City.

(Photo: Members of MCNN use hand lenses to view Southern Magnolia fruit in the Mt. Vernon neighborhood of Baltimore City. Photo credit: Linda Davis)

Denver Urban Gardens: growing community

Erika K. Jones, Denver, CO



Each March, we eagerly anticipate the call to pick up our free seeds for the season. We spend the early spring mapping out our extensive urban backyard garden, planning harvests and distributions, spreading the word about the program, and prepping the soil. Each May, more excitement occurs as we get the call to pick up our potted starts and plants. May 15, the planting season in high altitude Denver begins, and we are actively engaged in our backyard urban growing project through mid-October, when winter snows begin again.

Through the generosity of Denver Urban Gardens – and their donations from seed companies, nurseries, and garden centers – we are fortunate enough to be a part of the “in need” zip codes within the city of Denver that receive free seeds, starts, and transplants to individual gardeners across the Metro area year after year. Through a free simple application process (to assess need and location), we are able to choose the herbs, vegetables, and comestibles that make up our productive urban garden. Our neighbors are also eligible for the innovative program, allowing entire communities to participate in urban farming/gardening, as well as donating harvests to food banks, neighborhood farmers markets, community food shares, and vegetable swaps. The free seeds and starts we receive contribute to a full summer of free, nutritious, organic produce for our family.

Denver Urban Gardens, founded in 1985 as an independent 501(c)3 with support from the Denver Office of Economic Development, distributes not only seeds and plants, but information and training as well – educating seed recipients in English and Spanish how to most effectively garden and farm on small urban plots in a challenging environment. Community classes, neighborhood gardening programs (with over 130 shared plots across the city), children’s and senior workshops, school gardens education programs (and over 40 school gardens citywide), farm to school cafeteria programs within the Denver Public Schools, and nutrition counseling all make up Denver Urban Gardens’ broad mission. In addition, research based on Denver Urban Gardens programming conducted through the Colorado School of Public Health provides important nutrition and wellness data supporting a variety of Colorado food systems programs, food security networks, and multiple local food organizations.

Spreading the word about this program to my neighbors and community members is both inspiring and challenging. Marketing a program like this is difficult, especially based primarily on word of mouth. Many potential seed recipients are wary of a program providing free services, and additional challenges are raised in cross-cultural situations with numerous language barriers (the largest cultural groups in Metro Denver include Vietnamese, Somali, and Latino), lack of local knowledge regarding weather and geography (especially challenging to recent immigrants), lack of awareness about health and nutrition issues, transportation challenges, and lack of space in urban settings. Taking into account the outreach challenges, Denver Urban Gardens is succeeding – at least in our small urban backyard garden. Urban food deserts in our community will hopefully be a thing of the past, one food-producing plant at a time.

www.dug.org/free-seeds-transplants

photo credit: Erika Jones

Winding Trails Parenting: Reconnecting Families to Nature

Erin Schneider, Waukesha, WI



Children from program play within a local city park (www.windingtrailsparenting.com)

From climate change to habitat destruction and biodiversity collapse, humans face significant environmental challenges that will require innovative solutions and a strong commitment to changing the way we live on our planet. Providing students with the knowledge and skills necessary to address environmental issues is one of the goals of environmental educators across the globe. However, as we continue to develop and implement environmental education programs, it is important to note the source of commitment of our environmental leaders so that we may design more effective curriculum and programming.

Interviews with environmental leaders by Chawla (1999) examined the sources of their commitment to action. Her study ranked the sources of commitment, with the top five as follows: 1) regular experience in natural areas, 2) family role models, 3) participation in environmental organizations, 4) negative experiences, and 5) educational experiences. It is interesting to note that outdoor experience and family role models ranked highest and environmental education ranked fifth. This does not discount the importance of a strong environmental education program within schools and nature centers—indeed it is more important now than ever. However, considering the important role outdoor experiences and family role models play in the development of environmentally active citizens, environmental educators should begin “seeking ways to foster the out-of-school experiences that figure so saliently in environmentally committed people’s memories” (Chawla, 1999). At the same time, other studies examined the important relationship between outdoor childhood experiences in nature and a commitment to environmental action. Both Tanner (1980) and Palmer (1993) researched the source of commitment, finding that regular childhood experiences in nature are “the single most important factor in developing personal concern for the environment.”

Thus, the main goal of the Winding Trails Parenting Course is to reconnect families to their surrounding natural environment (be it urban, suburban or rural) in order to provide children with formative experiences in nature. To accomplish this goal, there are six different workshops, each addressing a different barrier that prevents children from engaging in free play in nature. The issues addressed are universal to families in a variety of settings and situations – excessive consumption, marketing to children, increased screen technology use, over-scheduling, strong influence of the media, fear, emphasis on structured “learning opportunities” at an early age, and devaluing of free play. The parenting course workshops include: 1) Why Simplify? 2) Transforming the Home Environment, 3) Family Rhythms and Celebrations, 4) Time, Creativity, and Free Play, 5) Technology and the Media, and 6) Children and Nature. Each parenting course is tailored to the local community, providing parents with resources to connect to nature around their own home. Examples include connecting families with nearby parks and natural spaces, planting small gardens around the home, strategies to bring nature indoors, or learning more about their surrounding urban ecosystem.

Each of the six hands-on workshops go beyond building awareness in order to help parents develop and repeatedly practice the skills necessary to bring about sustainable change at home. Also, through a variety of activities, readings and reflections, the course develops many of the variables that lead to environmentally responsible behavior, including attitude, locus of control, personal responsibility, action skills, knowledge of issues, and intention to act (Hungerford & Volk, 2001). By addressing the growing need for a parenting program that works to reconnect families to nature, the long-term hope is to inspire a generation of citizens who are energized to create nature-rich, sustainable communities.

Sources: (1) Chawla, L. (1999). Life paths into effective environmental action. *The Journal of Environmental Education*. 31 (1), 15-26. (2) Hungerford, H., Volk, T. (2001). Changing Learner Behavior through Environmental Education. *Essential Readings in Environmental Education*. Stipes, Champaign, IL. (3) Palmer, J. (1993). Development of concern for the environment and formative experiences of educators. *The Journal of Environmental Education*. 24:3, 26-30. (4) Tanner, T. (1980). *Significant life experiences: A new research area in environmental education*. *The Journal of Environmental Education*. Vol 11, No. 4. 20-24.

Homewaters Stream Scientists

Haley Rutherford, IslandWood, Seattle, WA



As the rumble grows louder, a group of sixty 5th grade students appear around the corner having walked from their school to the park. After assembling the students into a circle, an educator asks: “How many of you have been to this park before?” About a third of the students raise their hands. “How many of you think you are scientists?” A few hands go down. The educator reminds them of Land and Water – a science unit where they experiment with various slopes and substrate to examine the relationship between land and water in the context of rivers and streams. They have come to a local park for the day to explore a real-world example of the stream model they have been working within class. As they walk to the first station, a student remarks, “Wow, I’ve never seen a real stream before...”

IslandWood had been known for many years as a “school in the woods.” This environmental education center located on Bainbridge Island, Washington, has been educating students on sustainability, the environment, and stewardship for over a decade. In 2010, IslandWood reached further into the realm of urban environmental education when Homewaters Project joined IslandWood. Homewaters was an organization that had spent 20 years focusing on connecting the classroom to real-world examples in the students’ home communities. The programs taught by Homewaters were created to nestle themselves directly into 4th and 5th grade science units in the Seattle School District. The oldest of Homewaters’ three current programs, “Land and Water,” was developed for 5th grade students in 2001 and has been through a series of updates over the last three years.

For the Land and Water program, IslandWood meets students at one of four selected parks in Seattle, depending on where the school is located. While the point of the program is to reinforce concepts in the Land and Water unit, its goals also include giving students confidence in learning outside, in their sense of place, and in their abilities as scientists. The basic structure of the program includes five “stations” where students use a number of tools to study the stream in the area and evaluate its health for salmon, a vital vein in the Pacific Northwest. Some students in Seattle have never seen or eaten this extraordinary fish. While it puts more of a focus on a health-of-a-stream study, studying salmon also lends a hand to building a stronger sense of place. Recent revisions include a “human influences” survey in addition to the stream water assessments. By examining the health of the stream in relation to humans’ impact, educators are able to tie in the locality of stormwater runoff and impervious surfaces in the city.

With such a broad range of concepts involved, this 4-hour program goes by quickly and educators are constantly balancing the needs of the students with the many concepts being taught. This broad range is in part due to partnerships with Seattle School District and Seattle Public Utilities (SPU) and their needs. IslandWood strives for a cohesive blend of the district’s need to reinforce the concepts in the science unit and fulfill state testing requirements; SPU’s desire to educate city-dwellers about runoff water, flooding, and salmon; and the IslandWood goal of creating stewards and a sense of place. Though at times this seems like a juggling act, it gives educators the ability to meet the students where they are at, and at the end of the day students leave the program with awareness of their scientific capabilities, the park down the street, and how they can be a steward. By experiencing and examining their local streams, students are able to truly see their connections to the area as well as how they can make a difference in their neighborhood.

YMCA Earth Service Corps

Harvey Brown, Seattle, WA



After school, a group of middle school students is elbowing each other through the doorway of their favorite teacher's classroom. One of them holds the all-important, data collecting clipboard, but they all want to be in this teacher's classroom, to ask him the all-important questions: How many lights do you leave on at the end of the day? Do you have a refrigerator in your classroom? This group, the school's Green Team, are leading themselves in an energy audit, interviewing all the teachers at their school about their energy use, and gathering data on how to save energy at school. Later, these students will draft an email with their energy saving recommendations that will be sent out to all teachers at the school. These are YESC students.

YMCA Earth Service Corps (YESC) is a unique program that serves students both in their schools through clubs, and outside of school through weekend service projects and large, regional events that bring together any and all students interested in the environment and what youth can do about it. YESC started in 1989, when students from Garfield High School wanted to do something to celebrate Earth Day, and came to their local YMCA for help. Since then, YMCA Earth Service Corps has been a student powered, youth-voice centered, environmental service and leadership program for youth in the Greater Seattle Area. In short, YESC's motto is "leadership through environmental service."

This year, YESC students have done everything from creating a plastic water bottle ban petition for Seattle Public Schools, to spending hours clearing blackberries out of their neighborhood park. They have led workshops about food deserts and watershed health for their peers, and helped start full time composting programs at their schools. The projects that students take on are varied and apply to many aspects of urban environmental education; the role of YESC staff is to support these students' projects. Additionally, YESC provide space and time, such as weekend eco-retreats, for students to connect with other students who care about the environment, or are interested in learning more about the natural world. YESC strives to mentor and support the next generation of environmental leaders in Seattle, and beyond.

Through YESC clubs and weekend service projects, the program helps students think about the environmental issues that affect their urban and suburban communities. YESC asks youth to think about their own personal impact on the earth, and also to think about the impact of their schools and communities. In this way, students are empowered to truly act locally and think globally. The evidence is in rain gardens thriving years later, the compost bins still being emptied daily, and the enthusiasm of a sixth grader having the chance to interview their favorite teacher, and be the teacher themselves.

Gowanus Canal:

From Superfund Site to Superfun Urban Environmental Education Opportunity

Jody Reiss, William Alexander Middle School in Park Slope, Brooklyn, New York City



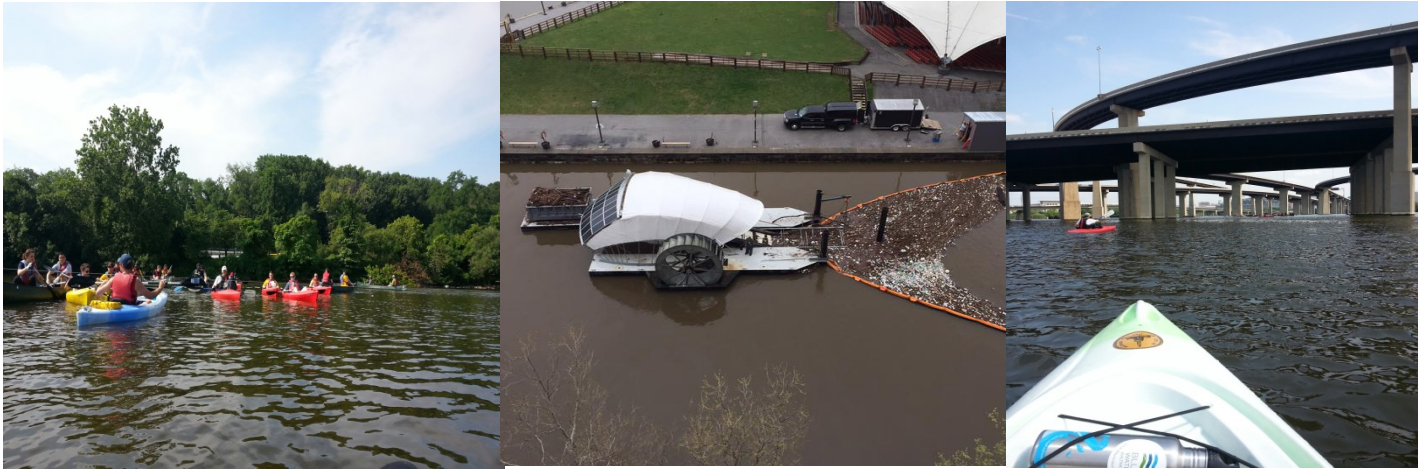
The Gowanus Canal reflects the history of a growing Brooklyn. It started out as a bucolic wetland that supported fishing and farming in colonial times. As the population of the borough grew, it was used for a dumping ground for household sewage and industrial waste from the factories that lined its shores. Designated a Superfund site in 2010, many community organizations are getting involved to foster ecological, business, and cultural activity in the watershed. My school is piloting a STEM curriculum written by the non-profit Gowanus Canal Conservancy.

It is geared to middle school students who live and attend school in the Gowanus watershed. They conduct water quality tests, survey and categorize native, non-native and invasive plants, and test soil for permeability. The built environments around the canal are also studied and analyzed. The curriculum culminates in the students designing a built solution for one of the problems faced by the Gowanus Canal.

After experiencing their urban environment in a new and engaging way, the students will hopefully take away the realization that although they do live in a city, this is also a natural environment, with its own urban ecology. The tools they are given and the experiences they have can lead to the understanding that they are stewards of this environment, and their actions can have great impacts. For example, after understanding that runoff from storms often goes directly into the canal, students will realize that everything they throw or leave on the street may end up in the canal and other local waterways.

Connecting to Our Waterways: History, Recreation and Action

Katie Dix, Blue Water Baltimore, Baltimore, MD



“Who lives in a watershed?” This question is commonly asked to volunteers and students participating in Blue Water Baltimore’s programs. A few hands rise, sometimes at half-mast; most participants are unsure. The ones that declare their residency usually have a stream, pond or reservoir close to their home. But many residents of Baltimore cannot see the streams in their neighborhoods; they are piped under the streets. Too often, the Chesapeake Bay is a body of water located “somewhere else.” Even the Baltimore Harbor feels out of reach for some.

In order to engage Baltimore City residents in recreation related to the water, Baltimore City’s Department of Recreation and Parks has been developing a summer paddling program. Most participants become engaged through school or summer camp. But Recreation and Parks has also partnered with three of Baltimore City’s environmental advocacy groups (Blue Water Baltimore, The Parks and People Foundation, and the Waterfront Partnership) to foster environmental awareness and engages users in the challenges facing their natural resource. During a program called Canoe & Scoop, volunteers collect trash along the shoreline at the Middle Branch and the Harris Creek Outfall. Volunteers learn how litter travels through the watershed and ends up in the water. They are encouraged to participate in activities upstream that will reduce storm water run-off and contribute to clean water.

Canoe and kayak programs allow residents both to recreate and witness first-hand the direct relationship of the surrounding water to the good or bad environmental health of our city. There are clear and direct examples of how Baltimore’s urban landscape has impacted its local waterways. You cannot embark on any paddle trip without experiencing trash. Many other watershed issues related to pollution, erosion and water quality could be discussed.

The network of organizations seeks to expand the program to further facilitate awareness, discuss water quality and demonstrate the impact that the urban landscape has on the environment. Baltimore is a City that has been defined by its waterways but like many post-industrial cities, human impact has depleted the health of natural resources. Paddle tours led by environmental advocates will cultivate a sense of history, culture and personal connectedness between the residents of the City and the local waterways. During these tours, participants will experience various sites including historic industrial sites and current projects designed to improve the health of the Baltimore Harbor. Sites of interest will include: oyster gardens, restorative floating wetlands, Mr. Trash Wheel, historically significant architecture and ships, Hull Street Pier, USS Torsk, and The Constellation. When city residents direct access to their own local waterways, they will begin to understand the challenges of urban watersheds and their own impact on those watersheds.

This program will be a partnership between Baltimore City Department of Recreation & Parks, Blue Water Baltimore, and Waterfront Partnership. The Baltimore Historic Society and Baltimore Heritage may contribute to content. Funding for this program has been requested from the Chesapeake Bay Trust.

Photo credit: Trash Wheel, Waterfront Partnership; Canoe & Scoop, Katie Dix.

Living Classrooms Foundation, Shipboard Education

Laurel Howard, Baltimore, MD



A school bus full of fourth graders from Baltimore County pulls up to the Frederick Douglass-Isaac Myers Maritime Park on a chilly, yet sunny spring day. The students are greeted by the Living Classrooms Shipboard Education crewmembers, who introduce themselves and the day's schedule, give the students personal flotation devices, and assist them in boarding the skipjack *Sigsbee*. Aboard the historic sailing vessel students will help raise the sails, trawl for local marine life, examine and learn about oysters and white perch, and partake in lessons about water quality, navigation, and plankton. The day culminates in a friendly contest: student groups create their own vessels out of aluminum foil, popsicle sticks, and duct tape, and whichever vessel holds the highest number of one-ounce fishing weights is dubbed the winner. It is an experiential way to demonstrate the concept of buoyancy.

Living Classrooms Foundation was founded in Baltimore in 1985, with one shipboard program. It has since grown into a widely known entity that boasts many programs across Maryland, Washington DC, and Virginia. This programming includes urban gardening, a charter school for K-8 graders, and watershed education. The organization prides itself on offering experiential education opportunities to all students involved in their programs. "Learning by doing" is the key component of their educational policy.

The Shipboard Education program in Baltimore uses boats as a learning platform for thousands of students each year. These boats include historic vessels such as the skipjack *Sigsbee* and buyboat *Mildred Belle*, as well as *Lady Maryland*, a replica of a Chesapeake Bay Schooner. The program includes day experiences for students who are in fourth grade through college, extended summer programs throughout the Chesapeake Bay and up to New England in conjunction with Johns Hopkins' Center for Talented Youth, and weekend trips for scouts and other groups. On the rare occasion that the weather is too unpredictable for day programs, students are given tours of Historic Ships that are docked nearby in Baltimore's Inner Harbor.

Living Classrooms primarily uses a major landmark, the Inner Harbor in Baltimore, to educate students on the watersheds, marine ecology, and maritime history of Baltimore and the Chesapeake Bay. Their ability to take students into this landmark creates vital connections between theory and understanding, while also creating a sense of place. Students are able to dissect an oyster and understand that organism's role in the health of the Chesapeake, while at the same time learning how they can affect the health of their local waterways.

Photo credits: Laurel Howard
www.livingclassrooms.org

Service-learning for the butterflies

Luke Grange, Belle Isle Nature Zoo, Detroit, MI



Belle Isle Nature Zoo Summer Nature campers discover a camouflaged Leopard Frog.

Every Monday morning this summer, the parking lot at Belle Isle Nature Zoo will fill with eager, apprehensive, or terrified 5-12 year olds. These children are arriving for their week of Summer Nature Day Camp. This camp is a Detroit tradition many youth look forward to – a free Nature Camp, in the ideal classroom: the beautiful island Belle Isle Park minutes from downtown Detroit.

It all starts with a letter: a plea on behalf of Monarch butterflies by Dr. Karen Oberhauser to young scientists. In it, she describes the problem of rapidly declining butterfly populations (a 90% decrease from their peak) and asks students to take action. But what can nature campers possibly do to make a difference in such a complex global conservation problem? This summer, our nature campers will have an opportunity for action appropriate for their age.

The younger campers (5-7 years old) will be guided to plant native milkweed and nectar-giving plant starts in pots to take home to help provide Monarch habitat in Detroit. The older students will be divided into small groups, each with the chance to undertake an independent project. Summer Nature Camp staff are prepared to guide students in a service-learning project of creating gardens of Monarch habitat around the Nature Zoo site. Students will be encouraged to come up with their own ideas for projects to benefit the Monarch – for example, creating a story to raise awareness of the Monarch butterfly's decline, distributing milkweed seeds in the community, or interviewing people in their neighborhoods about their memories of Monarch butterflies.

These students only have one week to spend with the Nature Camp. But for that week, as we explore Belle Isle, hunt for frogs, play predator-prey games, and make new friends, we hope to build a reverence and concern for nature that will accompany students after they leave. Our aim is to create a camp of change-makers, of active agents in the community who are empowered to identify problems and to take action to solve them. *(Photo credit: Luke Grange)*

Natureground: Connecting Community and Curriculum in the Commons

Polly Knowlton Cockett, Calgary, Alberta, Canada



Ephemeral and Enduring: Socioecological Cycles of Place-Making in an Urban Prairie

Natureground *n.* – a publicly accessible, reclaimed and reconstructed site-sustainable ecosystem, featuring native plants which have been rescued, seeded, or planted for the purposes of holistic education and enjoyment, maintained by local stewardship.

Spring emerges late in the high prairie, and it is already mid-June before City of Calgary Parks and local environmental educators arrive in Whispering Woods and the Centennial Natureground to work with Grade K-6 students from Dr. Coffin School next door. Gathering at the Prairie Amphitheatre, the educators teach the children about the native aspen parkland and rough fescue grassland ecosystems, and are always impressed at how much the students already know. The teachers also lead students in biodiversity conservation activities, perhaps pulling goat's beard, shepherd's purse, and bluebur – or whatever might now be rearing its unwanted head. In appreciation for all their hard work, the students may each be presented with a pair of honeyberry bushes from the City to plant at home. With patience, the plants should produce tasty berries in a few years!

Late June begins the new season's Community Biodiversity Bees. School families join the fun, along with several community stalwarts. Time is spent in both the Natureground and Whispering Woods, not only pulling unwanted alien invasive plants, but enjoying the emerging native plants getting ready to burst forth in blossom. It is wonderful to hear the children and parents and neighbors all getting to know each other, consulting books on "good" and "bad" plants, all the while speaking a variety of languages.

Strewn with the daily-renewed petals of wild blue flax matching the vast prairie sky, the Natureground is now alive with myriad colors under the early morning's mid-summer sun. Volunteers arrive to tend the reclaimed and restored native biodiversity of the remnant grasslands in the midst of urban encroachment and infestation by alien invasive plants and escaped ornamentals. Children from a day camp explore Whispering Woods and hunt for the interpretive signs depicting seasons and cycles of indigenous flora, fauna, and landforms through paintings, poetry, and prose by local artists, writers, and students, such as "Rough vs. Smooth" by Audrey Lane C., Grade 6. "I'm just a happy little fescue, but I think I need a rescue. Alien grasses like smooth brome are moving in upon my home. Invasive species are taking over, despite their pretty fields of clover. We must keep these foes at bay, even though they're good for hay. How shall we now control this pest, and let me thrive and grow my best?"

Graduate students from the nearby university hold an environmental education class in the sandstone amphitheatre, discussing ecological identity, place-based curriculum, and community engagement. As the summer wanes, teachers return to the schools nearby, preparing for another year of inquiry with their new students, which includes explorations into these precious spaces at the precarious and permeable interfaces of our natural and built environments.

Together we continue to discuss how these community- and school-based engagements have engendered a sense of place amongst the participants. We reflect on the sustainability of such engagements in the face of the ever-changing dynamics and recurrent rhythms of school and community life. Our conversations seek to illustrate avenues where we might each contribute to a renewed season of *in situ* socioecological mindedness. *Photo credits: Polly Knowlton Cockett; <http://natureground.org>*