



Environmental
Education
Advisory
Council of
New York City

EEAC

Spring 2017

Green Infrastructure Playgrounds: A Pollution Solution

by Tiffany Briery, NYC Playgrounds Program
Coordinator, Trust for Public Land

THE
TRUST
FOR
PUBLIC
LAND

New York City students spend a lot of time indoors, learning at desks, surrounded by four walls. Attention spans can wear thin, bodies can get antsy, and as any school teacher knows, it can feel pretty taxing to keep students deeply engaged in the core curriculum. Clap once if you've drawn the water cycle on a worksheet!

One trick many teachers use to help content come alive is to connect lessons to students' lives. At the Trust for Public Land's NYC Playgrounds Program, we build green schoolyards through a 10-week participatory design process that puts kids in charge. Once the schoolyard is designed and built, we help teachers use their playgrounds as outdoor classrooms to help teach topics such as plant growth or the water cycle. We believe that students and teachers who utilize and enjoy their playground for learning and fun make the best playground stewards.

When it comes to topics pertaining to the natural world, lessons in books and worksheets can be especially challenging for students growing up in an urban environment. Their experience of observable plant life may be limited to street trees and window boxes. Their new school garden, if they've chosen to include one in their design, may be the first garden they've had a chance to dig in and closely observe throughout the seasons. It's our hope that as students create a relationship with the nature in their playground, they'll be more interested in and likely to retain their lessons.

By creating a joyful place for students to connect with nature, we also hope they become invested in solving the many environmental challenges our city faces. From rising sea levels, extreme weather, and higher rates of asthma, NYC students are at the center of many environmental threats. How can we achieve environmental literacy about issues as complex and daunting as climate change and pollution, without causing kids to

have mini-meltdowns? One way we keep our message positive and forward-focused is to start with a solution: their green infrastructure playground!

We use the Center for Urban Pedagogy's amazing urban storm water model, "**Sewer in a Suitcase**," to demonstrate how water moves through city buildings and runs off city streets into our vast combined sewer system. The model contains four city blocks and two pipes that flow into the "waterway" lid. Brown glitter represents waste, like litter, sewage, oil, and grime. The students make predictions and observe what happens when a light, and then heavy, sustained, rainstorm hits the city.

They see the "glitter" overwhelm the hidden pipes and spew out the overflow point into their "waterway." They know the fish aren't happy, and the swimmers aren't happy; the students express their disgust. But

wait, some water has been captured in the model! One of the four city blocks in occupied by "sponge park", an actual sponge that stands in for the plant life and green infrastructure in their schoolyards.

Students place green infrastructure elements in their designs and observe how they affect water run-off. They'll add artificial turf fields which infiltrate water through a bed of gravel below, trees, green-roofed gazebos, raingardens, bio-swales, and raised bed gardens.

In the winter, when it's difficult to spend hours outside



Continued page 6

EEAC NEWS

Steering Committee Meetings

Please visit the EEAC website at www.eeac-nyc.org for meeting locations or contact an EEAC Steering Committee member. Steering committee meetings are open to anyone interested in learning about environmental education in New York City and sharing information about special programs and projects.

Newsletter Deadlines

If you would like to submit an article for the newsletter, please email it as a Microsoft Word attachment to KimE@dep.nyc.gov.

The newsletter deadline is the first Monday of Feb., May, and September. We would love your ideas!

Newsletter Committee

Lynn Cole
Joy Garland

Kim Estes-Fradis
Guest Editor: Mary Most

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The Environmental Education Advisory Council of New York City, EEAC-NYC, is the only nonprofit organization with the sole purpose of promoting and supporting outstanding environmental education in New York City Schools and other centers for learning.

ENVIRONMENTAL EDUCATION ADVISORY COUNCIL

Judith Hutton
The New York Botanical Garden
Teacher Training
2900 Southern Boulevard
Bronx, NY 10458
www.eeac-nyc.org

This newsletter is a publication of the Environmental Education Advisory Council (EEAC), a voluntary organization of educators, classroom teachers, administrators and other professionals in active support of quality environmental education.

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Brittany DiLeo, Treasurer and Membership Secretary
Shig Matsukawa, Secretary
Jacqueline Pilati, Program Chairperson

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Shig Matsukawa, Food Waste Recycler
Jacqueline Pilati, Teachers College, Columbia University
Mike Zamm, T.E.E.P.

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STAY IN TOUCH!

Members, keep up with the latest EEAC news on EEAC-NYC@googlegroups.com
If you would like to join the listserv contact Carol Franken at carolfranken@gmail.com



EEAC NYC



@eeacnyc



CHAIR'S MESSAGE

Since its inception in 1974, volunteers who are passionate about supporting environmental and sustainability education in NYC have sustained EEAC. I often joke that my position as Chair of EEAC over the last three years is my "unpaid" job because of the professional experience it has provided to me. It is notable that EEAC would not exist if it were not for the many people who have served as Steering Committee members over its 43-year history.

In this issue we bid a fond farewell to longstanding Steering Committee member, Gail David. She continues to enjoy "retirement" through volunteer work in support of STEME education. I want to thank her along with the many volunteers who helped create and then sustain the important work of EEAC. We welcome Mary Most to the team. She has graciously volunteered her time to become our new newsletter editor!

We are excited to reach out to EEAC members to join us in building the future of EE. There are a number of ways to get involved. If you are interested in joining the Steering Committee or sharing your work, please join us at a business meeting held on the third Wednesday of every month at New York University. You can also contribute to the EEAC newsletter or propose a program idea for 2017! We love to promote the work of EEAC members.

As always, we want to keep you connected! Check the EEAC NYC website (www.eeac-nyc.org) for the most up-to-date information about programs and meetings. Sign up for our [Google Group](https://www.google.com/groups?hl=en&ik=68b8b868) [[goo.gl/q8BR68](https://www.google.com/groups?hl=en&ik=68b8b868)], like our [Facebook](https://www.facebook.com/EEACNYC) page [www.facebook.com/EEACNYC] or follow the organization on [Twitter](https://twitter.com/EEACnyc) [twitter.com/EEACnyc] to keep up with environmental education news, jobs and events.

Thank you again to everyone who works hard to promote environmental and sustainability education!

Judith Hutton



Eric Sanderson
Director of the Mannahatta Project
March 16th, 6:30–8:30pm



Environmental Education Advisory
Council of New York City

Eric Sanderson will talk about his latest project, The Welikia Project, which seeks to uncover what New York City in its entirety looked like before it was a city. The talk will be followed by Q&A, networking and refreshments.

Register here

Eventbrite

goo.gl/gf3hVX

New York University
5 Washington Place,
Room 101

Questions?

info@eeac-nyc.org

www.eeac-nyc.org

Gail David, a lifetime EEAC member, is stepping down from the Steering Committee. We wanted to say thank you for her years of volunteer service.

I have known Gail for many years; her energy and commitment has always amazed me. When she announced her retirement after 40 years in elementary classrooms, beginning in the South Bronx and finishing in Fresh Meadows, Queens, I asked what she would do with all her spare time.

Gail responded:

“ I volunteer at the Jamaica Bay Wildlife Refuge, a part of the Gateway National Recreation Area and the National Park System. You can observe 225 migratory bird species at various times as well as other wildlife. I help in the visitor center answering questions and informing people of the latest sightings in this New York City gem. We have a lovely pollinator garden, in addition to the salt marsh environment. It's a favorite for school groups, bird watchers, and folks wanting a natural haven, a few miles from urban frenzy.



L-R: Gail David, Mary Leou, John Pritchard, Jacqueline Pilati-Rodriguez, Shig Matsukawa, Judith Hutton, Kim Estes-Fradis, and Mike Zamm at the EEAC 40th Anniversary Celebration

I'm also a teaching volunteer at the American Museum of Natural History. I also work with Urban Advantage, a collaboration between the Department of Education and Centers of Informal Education, working with 6th through 8th graders. Additionally, I volunteer at the Museum's Center for Biodiversity and Conservation during the annual Student Conference on Conservation Science for college and post grad students from the U.S. and all over the world to present their scientific research.

I also volunteer for the Hudson River Sloop Clearwater.

On the Science Council of New York City (SCONYC) Board, I help organize our annual conference at Stuyvesant High School.

I must express my appreciation for being allowed to serve on the Steering Committee of EEAC. I am humbled to have worked with so many dedicated, competent, and passionate doers and shakers. Your involvement and effectiveness in improving our environment and our world is wonderful. I will continue to fight for and support its values in retirement.

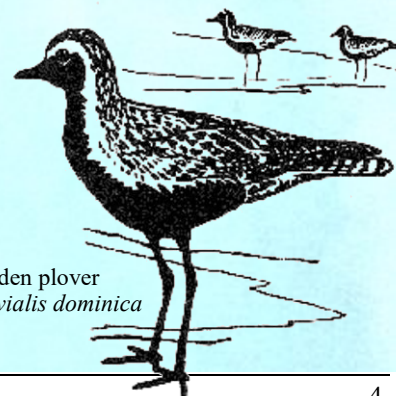
”



Gail and her daughters, Cheryl and Michelle

Thank you, Gail! You have been an inspiration for us when you served on the EEAC Steering Committee, and continue to inspire us in your retirement with all your efforts to bring Science Education to children, teachers, and all New Yorkers.

Joy Garland and EEAC Steering Committee



Golden plover
Pluvialis dominica



Teaching the Science of Sustainability

by Manuela Zamora, Executive Director, NY Sun Works

NY Sun Works is a not-for-profit organization that builds innovative science labs in NYC schools. Through the Greenhouse Project Initiative, NY Sun Works uses hydroponic farming technology to educate K-12 grade students and teachers about the science of sustainability. NY Sun Works envisions a generation of environmental innovators, empowered to create solutions to global resource challenges.

NY Sun Works designs and builds The Greenhouse Project Labs using traditional and vertical hydroponics systems as well as fish farms, integrative pest management corners, worm composting towers, seedling benches, energy bikes, water simulators, and rainwater catchment tanks. These labs offer students plenty of opportunities for hands-on and project-based

education.

To ensure the best use of The Greenhouse Project Labs, NY Sun Works trains the designated school teacher on the technical use of the hydroponic systems, and on implementing The Greenhouse Project curriculum. Combining of use of technology and curriculum, students begin to address local and global environmental issues, while meeting general requirements of the mandated NY State Science Standards and the NYC Standards.

NY Sun Works comprehensive curriculum is designed to inspire teachers and students to ask questions, investigate systems, make predictions and design solutions. Students participate in choosing growth media; selecting and planting seeds; combining

plant-nutrients and water; monitoring plant-growth; harvesting; monitoring NFT Systems; VIG systems, vine crops systems, fish growth and the fish farm; worm-composting, controlling pests; and measuring captured rainwater. Physics, chemistry, and biology are covered in cross-curricular studies while students add nutrients into the water reservoirs; measure pH or electric conductivity levels; explore plant growth and adaptations, homeostasis, or photosynthesis; and so on.

NY Sun Works is partnering with 43 public schools in the five boroughs of NYC, and 4 public schools in NJ. With 16 new labs to be built in 2017, we are on our way to reach our goal of 100 labs by 2020.

Learn more about
our program at
www.nysunworks.org



Guest editor for this issue:

Mary Most

Assistant Director, Public Education
Bureau of Recycling and Sustainability

Thank you!



(though I have dreams of an igloo-building workshop!), we stay hands-on indoors by creating paper urban watershed models. Students crumple a piece of cardstock or recycled file folder, draw in where they think the waterways would go, add in other city elements – like cars, dog-walkers, litter, and buildings – and then spray water on their models to simulate rain, and make some stormwater run-off observations.

When it's warm again, we follow up this lesson with a green infrastructure scavenger hunt in their yard so that students can see how their yard is actually helping to alleviate the storm-water run-off problem.

Each of our playground sites captures an average of 500,000 gallons of stormwater per playground per large rain event, and we hope that as student observe and play on this pollution solution, they'll be inspired to go forth and be their generation's problem solvers and innovators. More importantly, we hope they feel that they can have fun while doing it.



Students at PS 111 in Hell's Kitchen pull weeds and create a "Weeding Guide" specific to their own gardens.

TAKE NOTE

Mid April

Early May due date

SATURDAY, APRIL 8, 2017, 8 AM TO 4 PM



SCONYC

Science Council of New York City



SCONYC 39TH ANNUAL CONFERENCE

Saturday, April 8th, 8:00 AM to 4:00 PM

Stuyvesant High School, 345 Chambers St., NYC

This popular conference and luncheon includes workshops, vendors of educational materials, exhibits by local environmental organizations, and a chance to network with fellow science teachers. 6 hours of CTLE credit are available for those who need professional development hours.

The keynote speaker, Dr. Arthanasios Koutevas, will speak on “*Ice Ages and Climate Change*.”

More information here www.sconyc.org/conferences

3rd ANNUAL EARTH DAY CELEBRATION
CHILDREN'S LIBRARY DISCOVERY CENTER



Queens Central Library, 8911 Merrick Blvd. Queens Library
Queens, convenient to the F train, 169th St.
stop

Check out the library during Spring break! We are celebrating the Earth all week. Programs Monday to Friday afternoons from 2:00–3:00PM, first come first serve.

Family Earth Day Festival Saturday, April 15th, 11:00 AM–2:00 PM. Programs and activities for families, presented by the Library's own Discovery Team and several local environmental organizations.

All Queens Library programs and events are Free!

www.queenslibrary.org scole@queenslibrary.org

WATERSHED FORESTRY

Watershed Agricultural Council



INSTITUTE FOR TEACHERS

Sunday, July 23 through Thursday, July 27, 2017

Spend 5 days exploring the forests, streams, reservoirs, and communities of the NYC Watershed.

WFIT 2017 is a FREE program for 6-12th grade teachers from the NYC Watershed and New York City, at the Taconic Outdoor Education Center in Cold Spring, NY. Participants earn over 40 Professional Development hours, practice over 20 hands-on activities, and get trained in the Project Learning Tree and Project WET curricula.

Participation is limited to 25 teachers. [Applications](#) [\[goo.gl/4ubKvA\]](#) due by Friday, May 5, 2017, at 5 PM.

Book Buzz

Review by
Jonathan Billig,
Metro Region
Representative,
NYS Outdoor Education Association
and School Programs Educator,
Wave Hill

Robin Wall Kimmerer's *Braiding Sweetgrass* is a poultice of plant wisdom and native culture informed by contemporary western science. It doesn't shy from the dark legacy of this nation's relationship to land and native peoples, expressed in beautiful, almost prophetic nature writing. Ultimately, *Braiding Sweetgrass* invites us into a more nurturing relationship with our world.

I read the book with colleagues from the [NYS Outdoor Education Association](#) in our Winter Weekend Book Club. Even though the book club was comprised mainly of environmental professionals, we appreciated reading these clear examples of how people can be a constructive part of nature. In the chapter "Mishkos Kenomagwen: The Teachings of Grass," a scientific study finds that Sweetgrass (*Hierochloe odorata*) thrives through native harvesting techniques, and diminishes when left alone. To quote Kimmerer's paraphrase of native wisdom,

If we use a plant respectfully it will stay with us and flourish. If we ignore it, it will go away. (2013, p. 157.)

Over and over, with support from both scientific process and indigenous wisdom, the book paints a picture of people as part of a thriving ecosystem.

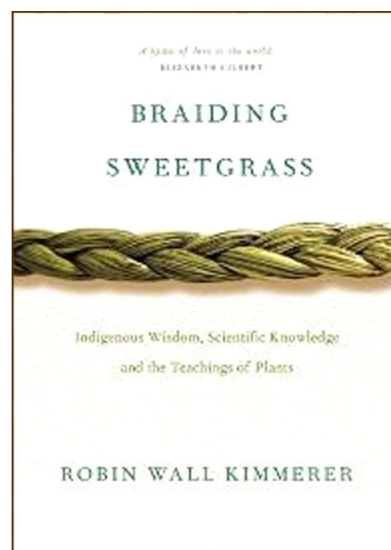
Just as *Braiding Sweetgrass* is inspiring and joyful, it is also poignant; Kimmerer is very conscious of the suffering upon which the United States is built. There are chapters on the pollution of Onondaga Lake, sacred site of the Iroquois Confederacy now turned Superfund site; and on Carlisle, a "re-education center" where Native American children had their heritage stripped from them and replaced with "civilized" ideals. This disregard for more-than-human nature, and the human cultures that live close to it, is identified with a kind of cannibalism, a sickness of greed afflicting our society.

In the book club, when we found ourselves despairing over the dark side of America's legacy, the narrative itself would provide an answer, or at least a response. Despite the brutal realities of Carlisle, there is the new settlement of Kanatsiohareke in upstate New York. Described in the chapter "Putting Down Roots," that community represents a return of some Mohawk people to their ancestral lands and life-ways. Kanatsiorakere is one of myriad living stories that inspire Kimmerer and her readers throughout the book.

Braiding Sweetgrass invites us to celebrate, mourn, and accept both negative and positive responsibility in this world we share. Kimmerer is aware of a writer's role in that process. In her words,

Language is our gift and our responsibility. I've come to think of writing as an act of reciprocity with the living land... stories that bring science and spirit back together... (2013, p. 347.)

The book is an effort in that direction; it's the story of a Ph.D. botanist, a mother, and a member of the Citizen Potawatomi Nation in a time of great challenge and great potential. It is an interactive portrait, inviting the reader to respectfully join in the process of re-weaving relationships between people and land.



WATERSHED MOMENTS

Connecting to Our Natural World

2017 NYSOEA ANNUAL CONFERENCE

October 26-29, 2017

Clearpool Outdoor Education Center

33 Clearpool Road

Carmel, NY 10512



**SAVE
THE
DATE**

For more information:

John Stowell 845 265 2496

john.stowell@parks.ny.gov

EEAC TEEP Update

By Mike Zamm

EEAC's TEEP (**Teacher Environmental Education Preparation**) project continues to move forward. The overall TEEP committee, working with the **Full-Time Paid Sustainability Project Working Group** that emerged from TEEP's October 6, 2016, workshop at Teachers College, is working on a White Paper to be submitted to the City Council, Manhattan Borough President Gail Brewer, and other elected officials, describing the need for a pilot program in 50 schools where full-time paid sustainability coordinators will be placed. The educational and environmental benefits of this approach will be compared to 50 schools that function under the current sustainability coordinator (SC) structure in which the school assigns existing personnel – usually a teacher, paraprofessional, administrator, or parent coordinator – to take on the responsibilities of the SC on top of their already full-time jobs without extra compensation or time allowance.

If the pilot is successful, TEEP will ask the City to place full-time paid sustainability coordinators in all NYC public schools. Since the White Paper calls for the SC position to be filled by teachers, the project will offer an incentive to colleges of education in NYC and NYS to infuse more environmental education into their preparation programs so they can graduate qualified candidates to fill the new SC positions. The National Wildlife Federation, the District 3 Green Schools Group, and Teachers College are working in partnership with EEAC on this project.

The **Clearinghouse for Teachers Working Group**, which also emerged from the 10/6/16 workshop at Teachers College, is moving forward as well. Under Brittany DeLeo's leadership, existing databases and websites of EE information, existing providers, and place-based curricula are being collated, with the goal of making this list of resources accessible to educators.

More from the Trust for Public Land Playground Program goo.gl/AOrGix ([See article page 1.](#))

Students may also include a rain garden and green-roof gazebo in their designs.



PS 11 Adolph S. Ochs
Community Playground
656 Broadway, 9th
floor, New York, NY



Novo's Spring Poem

MEMBERSHIP APPLICATION



☐ New member ☐ Renewal Date _____

MEMBERSHIP CATEGORY

☐ \$30 Individual ☐ \$75 Organization

☐ \$250 Individual Life Membership

Please make checks payable to "EEAC."

Mail completed form and check to:
Attn: Judith Hutton
The New York Botanical Garden
Teacher Training
2900 Southern Boulevard
Bronx, NY 10458

Members are welcome at EEAC Steering Committee meetings, held every 3rd Wednesday of the month. Check our website for these and other events.

www.eeac-nyc.org

EEAC is a 501-(c)3 organization.

Name _____

Title _____

Organizational Affiliation _____

Home Address _____

City _____ State _____ Zip _____

Organization Address _____

City _____ State _____ Zip _____

Home phone _____

Business phone _____

Email _____



ENVIRONMENTAL EDUCATION ADVISORY COUNCIL

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