**The Evolution of the Estate’s Signature Outdoor Environmental Education Program & Its Impact today**

Polly Wakefield was an advocate for the environment and led local efforts to protect the land surrounding the Blue Hills area. She wanted the land she left - The Wakefield Estate - to be used for learning and engagement. Today, we use it as a living laboratory with which we carry on her wishes to “ re-establish the contact between people and the land.” At the heart of our environmental education is the work we do with young learners - grades K-5. This article delves more deeply into how the program evolved, why this initiative is needed, and provides anecdotal evidence from visiting educators about the importance of these experiences for their students.

**History and How It Got Started**

When Polly Wakefield died in 2004, her Trustees convened a visioning session that gathered experts in the fields of preservation, education, museum studies, and key area contacts to discuss an appropriate use for the extraordinary treasure that was the Wakefield Estate, 22-acres of former farmland that had been in one family for eleven generations that provided a rich blend of formal gardens, successional woodlands, and natural features. It was quickly recognized that New England possessed an abundance of house museums far grander than this would ever become, but a dearth of publicly-accessible greenspace that could provide direct experience with nature and designed landscapes. Thus the mission of the organization was formed, to provide “participatory learning” experiences for all ages. Yet, with limited financial resources and established connections, it was deemed critical to pursue this goal through a network of collaborations. Fortunately for the organization, it quickly forged an important alliance with Milton Public School’s science director, Barbara Plonski, who instantly recognized how the resources of the estate could be powerful drivers for science education. After-school programs were developed that provided opportunities to explore nature, the pond and stream, time to play games, and enjoy “unstructured play.”

Around the same time, a movement to bring students outdoors was started in the Boston Public Schools (BPS) and with it, the “Boston Schoolyard Initiative,” which helped develop outdoor classrooms in many schools throughout the district. These schoolyard features were designed to support teaching and learning and provide a dose of nature just outside the school door. An emphasis was made to provide a progression of teaching science in a more realistic environment. The next logical step was to include real-world field experience. “This is where the Wakefield Estate experience comes into play,” remarked Luis Arroyo, Science Specialist at Nathan Hale School in Roxbury.

Over a decade ago, the Wakefield Estate’s Program Director Erica Max (whose role at the time was as Landscape Supervisor and Educational Coordinator) attended several training sessions in order for the estate to qualify for the Boston Youth Environmental Network’s “Get Out And Learn” funding initiative to pay for buses. Arroyo, the instructor at one of the sessions, visited the estate soon after and immediately saw the estate’s potential value to his students.

When asked if he wanted to bring his third graders from the Charles Taylor School in Mattapan for a Wakefield Estate field experience, Arroyo remarked, “Yes, I’d like to bring my third graders… and my fourth and fifth grader - -I’d like to bring the whole school!” And he did, all five hundred students with the buses paid for by the GOAL (Get Out And Learn) grant the estate had received. Since the GOAL initiative ended in 2012, the Wakefield Charitable Trust has paid for the buses and program in its entirety, asking schools to contribute in whatever way possible.

Arroyo continues, “The Wakefield Estate serves as an outdoor classroom in a real-world environment. Students are able to study a variety of organisms in different environments (various types of plants, crayfish, fish, snakes, birds, mammals, insects, and amphibians). These are concepts that are better taught outside the classroom. The trips to the Wakefield Estate are always used as a reference for teaching back in the classroom. If I’m talking about water erosion and weathering I can remind students of the time we used the stream as a classroom."

During one of those early visits, Max brought a school group from Roxbury down to a plush grassy area near the estate’s pond and asked the children to sit down so they could enjoy their lunch. Several of the children looked up at her with alarm and said, “I am not going to sit there – it’s dirty!” At that moment, Max realized that some of the children had likely never sat on grass, and she recognized first-hand evidence of a nature disconnect.

**Program Impact**

Recent research cited in this article has found that “children spend (at least) twice as long looking at screens than playing outside" and are increasingly disconnected from the natural world just as “a growing mountain of research (accessible through Children & Nature Network’s Research Library at https://www.childrenandnature.org/learn/research) is showing the massive extent nature can play in improving early childhood development and education.” (https://greenmatters.com/family/2018/06/07/ZM6rnt/nature-preschools-classrooms)

For many students, the Wakefield Estate provides a safe opportunity to explore the outdoors. As one teacher shared, “One reason why the Wakefield Estate is so important for my students is because they live in neighborhoods in Boston where it is not always safe for them to play outside. Some of them have never been hiking in a forest or digging in the mud alongside a pond. Catching a frog or crayfish from the pond and using a field guide to identify was always a highlight of our trip. As a teacher, I loved that we were encouraged to bring our science notebooks and record observations and experiences from the day.”

Through the estate's collaborative work with Arroyo, and dozens of other science specialists and classroom teachers, over 2000 elementary-age students spend a full school day on the grounds of the Wakefield Estate each year. Their visit consists of hands-on environmental learning activities that focus on life cycles of plants, animals and insects, both land and aquatic species, environmental literacy and stewardship. Emphasizing inquiry-based and exploratory/play learning activities, program staff works closely with BPS Science Specialists and classroom teachers to ensure that the field experience supports the BPS curriculum concepts and content.

Is this work having an impact? Current research is trying to quantify exactly that, as one expert, Cathy Jordon, PhD with Children & Nature Network remarked, “We don't have a lot of research on the contribution of lack of nature exposure on the development of emotional/behavioral issues in children, but we do know that children with such issues can benefit from nature contact, nature play and nature-based education.” This research (https://www.childrenandnature.org/learn/research )confirms that getting kids "outside to learn" has instant ramifications, and the Wakefield Estate staff has witnessed that. Even more poignantly, our partner teachers have seen the impact on their students:

“The Wakefield Estate field trips are one of the most valuable experiences of the school year for me and my students. This place is where science came alive for them! From the moment they stepped off the bus for each field trip they were filled with wonderings about the natural world," stated Holly Rosa, then a Science Specialist and now Assistant Director of Implementation K-12 Science, Technology & Engineering at Boston Public Schools. Rosa continued, "Each field trip is so thoughtfully planned out and tailored to meet the learning needs of my students. I remember one year my students were struggling with understanding what it was a decomposer actually did in an ecosystem. At the estate, we spent time walking along the Decomposer Trail identifying decomposers, discussing the effects of decomposers we were observing and asking questions about them. This was so helpful, but it wasn't truly apparent till a few months later when my students were talking about decomposers and they said, "wait, we saw mushrooms on the decomposer trail at the Wakefield!" These kinds of learning experiences stay with students, not for a year or a month, but for their whole lives.” Read Rosa’s article “Go With The Flow” about her work with students at the Wakefield Estate published in Children & Science here: http://www.covington.kyschools.us/userfiles/15/My%20Files/5th%20gr%20add%20chg/go%20with%20the%20flow.pdf?id=4933.

A teacher from the Edison shared, “For my students, these visits are so important. Students develop language around the seasons through hands-on experiences. They learn how to talk about the changes they see in the environment. They learn how to investigate and explore in a safe place. Students are so often "plugged in" and don't have language around our Earth and its beautiful resources. She added, “The visits have changed the way my students interact with nature around our own school. Students notice more the changing of the leaves, locating seeds and fruits as we walk around the perimeter of the building. They look more closely. They observe. The visits help them develop stewardship and a more caring view of the property surrounding our own building.”

Each year, the Science Specialist at the Murphy School brings out her fourth graders. She remarked,:” Wakefield Estate is a field trip that I look forward to every fall and spring with my science students. Many of my students have never played the part of "scientist" out in nature, and are absolutely in awe during the entire experience, from looking at seed pods that have fallen to the ground, to the decomposition of tree stumps, to the life cycle of real live frogs. What I love most about visiting Wakefield is how it makes the science curriculum that I am teaching the kids in school "come alive." We have a Soils, Rocks, and Landforms unit that we do in the fall of 4th grade, and it couldn't be more perfect to follow these studies up with a trip to Wakefield. My students get to examine rocks at Wakefield for signs of weathering, they get to examine forest soil for its components, and they are lucky enough to witness erosion firsthand as we walk alongside the stream that runs through the estate. When we get back to the classroom, the kids can draw and write about everything they saw, and bring their studies on the topics full circle.

A teacher from Boston Renaissance School told us, “Wakefield Estate has made a tremendous impact on my students. It provides an immersive science experience at no cost to the families. Due to budget restrictions at our low income school, hands-on experiences such as these often have to occur by watching videos and looking at pictures online. However, with the opportunity to visit Wakefield Estate, are students are able to see the seasonal changes and study the different plant cycles and parts in a way they wouldn’t otherwise experience.

For many children, the day at the Wakefield Estate is their only outdoor science experience during the school year that makes the connections between in-school learning and out-of-school observation. The Science Specialist from the Russell School shared how the impact of the trip flowed back into the classroom, the school community, and even their families, “The students were handed brown paper bags as they got off the bus to collect samples from our experience in the field like real scientists to do! The 5th graders enjoyed being able to take a piece of nature back to school with them and would often share what was in their bag with the younger students so they could experience the Wakefield Estate too. This was also an opportunity to take part of the Wakefield Estate home to share their experience with their families.”

Hearing “Best field trip ever!” or seeing the ecstatic glee on a child’s face when Jack the Llama’s furry lips eat of his hand – these things never get old. As the estate institutes more sophisticate assessment methods, we will be able to better quantify the impact of this program. In the meantime, our evidence is anecdotal, such as witnessing the calmness that comes over the previously agitated autistic child when he holds the miniature rooster, or having a teacher marvel that her student, who typically can’t keep his eyes open in the classroom, is suddenly “on fire” with excitement during the field trip.