



# Getting Out Gets Results:

Environmental Education Research  
from Boston and Beyond

*Presented by the*

***Boston Youth  
Environmental  
Network***

## ***Environmental Education:***

*Gets students excited about learning*

*Enhances measures of academic achievement*

*Builds a life long environmental stewardship ethic*

*Encourages people and groups to come together*

# EE Research Shows Promising Results in:

## *Student Engagement*

Environmental education programs immerse students in their physical surroundings.<sup>10,15,16,20</sup> A field-based urban ecology program in Boston helped students (especially girls) connect to their community through scientific investigation.<sup>4</sup> Students in research from across the country, have shown more interest in learning when their programs used the environment as a context for integrating math, language arts, social studies, science, and/or the arts.<sup>3,4,16,20</sup> Extensive research exists documenting the link between enthusiasm for learning and subsequent academic achievement.<sup>18</sup> It is little surprise that kids learn better when their hands and minds are actively engaged.

## *Academic Achievement*

At least a dozen recent research studies have documented positive associations between environmental education and student academic achievement. These collectively represent 16 states and nearly 300 schools. Many of these studies have included extensive analysis of standardized test scores.<sup>5,9,12,16,19,21</sup> Boston schools with renovated school yards were associated with higher MCAS scores in Math.<sup>17</sup> Other research has shown that students involved in environmental education demonstrated improved critical thinking,<sup>13</sup> a better ability to apply science to real-world situations,<sup>4</sup> and improved science knowledge.<sup>2</sup> Some of these studies also showed environmental education to be associated with higher GPA,<sup>16,21</sup> better attendance,<sup>5,16,19</sup> and/or other measures of academic achievement.<sup>14,19,21</sup>

## *Environmental Stewardship*

Children's involvement in environmental education can provide a foundation for environmental stewardship behavior.<sup>8,15,22</sup> A study that presented data from several schools across New England, including Boston, showed that students with more environmental education were more likely to report taking action to help the environment.<sup>20</sup> An evaluation of a Boston-based program emphasized the importance of providing young people with initial and repeat outdoor experiences.<sup>10</sup> Early adolescents in another study reported more confidence in their own capacity to make a difference and displayed more optimism for the future as they worked with other students on environmental issues.<sup>7</sup> Yet, education is only part of the story of getting kids outside. Adults (in or out of school) can be a significant influence in nurturing children's interest in the environment.<sup>7</sup> Feelings of safety and security have been identified as being important to a child's ability to bond to a place.<sup>15</sup> Childhood experiences of special natural places, often with the companionship of a caring adult, have been reported by adults as top reasons for their continued involvement in environmental engagement and activism.<sup>8</sup>

## *Connections and Collaboration*

Environmental education is about understanding the interconnectedness of our surroundings, and it is about studying local places. These features create excellent opportunities for making connections between new groups and ideas. Environmental education can encourage connections across generational lines when projects have children become the experts and then teach their parents.<sup>11</sup> Projects involving school grounds can be used as opportunities for collaboration with people working in other related fields and to promote involvement in issues of children's physical, social, mental, and spiritual health.<sup>6</sup> A Boston study provided several useful recommendations for ways environmental education programs can build connections across cultural lines through increased cultural competency.<sup>1</sup> The Boston Youth Environmental Network is a prime example of how environmental education brings people together.



## Research References

**Teacher:** "I think that's how stewardship starts. Kids are connected to this place so they're taking care of this place. Maybe as they get older they'll understand that they're responsible for their neighborhood and their city."

**Parent:** "There is that sense of like, the school's really giving my family something."

**Principal:** "It's one thing to teach children through books, but it's another thing to do hands-on with them so they can actually see these life lessons. They seem to stick with them a lot quicker and a lot longer than the actual book knowledge."

**Student:** "It's a good experience to find all about nature and see what the world is all about."

1. Agyeman, J., Newhall-Smith, K., & Ringelheim, J. (2006). *Mainstreaming diversity: From paradigm to practice?* Boston, MA: Barr Foundation. Retrieved December 12, 2006 from [http://www.barrfoundation.org/resources/resources\\_show.htm?doc\\_id=427989](http://www.barrfoundation.org/resources/resources_show.htm?doc_id=427989)
2. American Institutes of Research. (2005). *Effects of Outdoor Education Programs for Children in California. Sacramento.* Retrieved March 15, 2005 from [http://www.sierraclub.org/insidetheoutdoors/downloads/outdoorschool\\_finalreport.pdf](http://www.sierraclub.org/insidetheoutdoors/downloads/outdoorschool_finalreport.pdf)
3. Athman, J., & Monroe, M. (2004). The effects of environment-based education on students' achievement motivation. *Journal of Interpretation Research*, 9(1): 9-25.
4. Barnett, M., Lord, C., Strauss, E., Rosca, C., Langford, H., Chavez, D., et al. (2006). Using the urban environment to engage youths in urban ecology field studies. *The Journal of Environmental Education*, 37(2), 3-11.
5. Bartosh, O. (2004). *Environmental education: Improving student achievement.* Unpublished master's thesis, The Evergreen State College, Olympia, Washington. Retrieved February 4, 2007 from [http://www.peecworks.org/PEEC/PEEC\\_Research/S0032637E-010702FB](http://www.peecworks.org/PEEC/PEEC_Research/S0032637E-010702FB)
6. Bell, A. C. & Dymont, J. E. (2008). Grounds for health: The intersection of green school grounds and health-promoting schools. *Environmental Education Research*, 14(1), 77-90.
7. Blanchet-Cohen, N. (2008). Taking a stance: Child agency across the dimensions of early adolescents' environmental involvement. *Environmental Education Research*, 14(3), 257-272.
8. Chawla, L. (2007). Childhood experiences associated with care for the natural world: A theoretical framework for empirical results. *Children, Youth and Environments*, 17(4), 145-170.
9. Danforth, P. (2005). *An evaluation of the National Wildlife Federation's Schoolyard Habitat Program in the Houston Independent School District.* Unpublished master's thesis, Texas State University, San Marcos, TX.
10. Duffin, M., Becker-Klein, R., Plumb, S. & PEER Associates. (2007). *Summary report: An evaluation of the Youth Opportunities Program and the A Mountain Classroom program.* Retrieved August 15, 2008 from <http://tinyurl.com/2kwm7g>
11. Duvall, J., & Zint, M. (2007). A review of research on the effectiveness of environmental education in promoting intergenerational learning. *The Journal of Environmental Education*, 38(4), 14-24.
12. Emekauwa, E. (2004). *They remember what they touch: The impact of place-based learning in East Feliciana parish.* Rural School and Community Trust. Retrieved November 16, 2005 from [http://www.peecworks.org/PEEC/PEEC\\_Research/0009D4FB-007EA7AB.0/Emekauwa%20East%20Feliciana%202004.pdf](http://www.peecworks.org/PEEC/PEEC_Research/0009D4FB-007EA7AB.0/Emekauwa%20East%20Feliciana%202004.pdf)
13. Ernst, J. A. & Monroe, M. (2004). The effect of environment-based education on student' critical thinking skills and disposition toward critical thinking. *Environmental Education Research*, 10(4): 507-522.
14. Falco, E. (2004). *Environment-based education: Improving attitudes and academics for adolescents.* Retrieved November 3, 2005 from [http://www.myschools.com/Offices/CSO/enved/documents/EducationUsingtheEnvironmentFINAL2004\\_000.doc](http://www.myschools.com/Offices/CSO/enved/documents/EducationUsingtheEnvironmentFINAL2004_000.doc)
15. Fisman, L. (2005). The effects of local learning on environmental awareness in children: An empirical investigation. *The Journal of Environmental Education*, 36(3), 39-50.
16. Lieberman, G. A. & Hoody, L. (1998). *Closing the Achievement Gap.* San Diego, CA: State Education and Environment Roundtable.
17. Lopez, R., Campbell, R., & Jennings, J. (2008). *Schoolyard improvements and standardized test scores: An ecological analysis.* Boston: Mauricio Gaston Institute for Latino Community Development and Public Policy. Retrieved March 12, 2008 from <http://site.www.umb.edu/gastonwebsite/articles/Lopez%20Schoolyards%202008.pdf>
18. Marzano, R. J. (2003). *What works in schools: Translating research into action.* Alexandria, VA: Association for Supervision and Curriculum Development.
19. National Environmental Education Training Foundation (NEETF). (2000). *Environment-based education: Creating high performance schools and students.* Retrieved October 1, 2004 from <http://neetf.org/pubs/NEETF8400.pdf>
20. Place-based Education Evaluation Collaborative (PEEC). (2008). *The benefits of place-based education: A report by the Place-based Education Evaluation Collaborative.* Retrieved September 1, 2008 from [http://www.peecworks.org/PEEC/Benefits\\_of\\_PBE-PEEC\\_2007\\_web.pdf](http://www.peecworks.org/PEEC/Benefits_of_PBE-PEEC_2007_web.pdf)
21. State Education and Environment Roundtable (SEER). (2000). *California Student Assessment Project: The Effects of Environment-based Education on Student Achievement.* Retrieved July 14, 2005 from <http://www.seer.org/pages/csap.pdf>
22. Wells, N., & Lekies, K. (2006). Nature and the life course. *Children, Youth, and Environments* 16(1). Retrieved August 2, 2008 from <http://www.colorado.edu/journals/cye>

**Voices and faces from the Boston Youth Environmental Network:**



# Working Together For A Greener Greater Boston

## **Boston Youth Environmental Network**

*is a group of organizations dedicated to advancing environmental literacy and stewardship. We speak with a single voice to inform policy. We work together to develop relationships, strategies, opportunities, and resources by partnering with and informing teachers, families, children, policy makers, and each other.*

## **The BYEN Vision**

*By the year 2020 young people in Boston's K-12 schools, after-school, and summer programs will have an appreciation for the environment that is based on high quality, active, engaging, and culturally relevant learning and employment opportunities in their community and beyond.*

## **BYEN Member Organizations (K-12):**

Alternatives for Community and Environment, Antioch University New England, Appalachian Mountain Club, Arnold Arboretum, Boston Children's Museum, Boston College, Boston Family Boat Building, Boston Harbor Islands-National Park Service, Boston Natural Areas Network, Boston Public Schools, Boston Schoolyard Initiative, City of Boston Parks Department, City Year Green Team, City Sprouts, Codman Square Health Center, DOTWELL, Dudley Street Neighborhood Initiative, E, Inc., Eagle Eye Institute, Earthwatch Institute, Earthworks, Emerald Necklace Bird Club and Nature's Classroom, Environmental Justice Action Media, The Esplanade Association, The Food Project, Forest Hills Ed. Trust, Franklin Park Coalition, Friends of the Blue Hills, Green Grease Monkey, Harbor Connections, Harvard School of Public Health, Island Alliance, Lesley University, Machine Science, Inc., Mass Audubon-Boston Nature Center, Massachusetts Environmental Education Society, Medicine Wheel, MITS, Museum of Science, Neighborhood of Affordable Housing, New England Aquarium, New England Wildlife Center, Odyssey High School at South Boston, Provincetown Center for Coastal Studies, Roots and Shoots, Rose Fitzgerald Kennedy Greenway Conservancy, Sailors for the Sea, SCI Dorchester, Social Justice Academy at Hyde Park, Sociedad Latina, TERC, Thompson Island Outward Bound, Trailblazers - National Park Service, UMass Boston, Urban Connections - US Forest Service, Urban Ecology Institute, Urban Science Academy, Urban Wilds, Youth Build Boston, Youth Build USA, Zoo New England

**For more information go to  
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