

Appendix F. Organizations with Environmental Literacy Resources for Schools

To compile these resource lists, the District Department of the Environment created an on-line survey for organizations to complete. Responses were collected from January –March 2012. All of the data in these tables is self-reported.

AIR – includes air quality, climate change

Organization	Curricular Resources	School-based Presentations	Field Experiences	Professional Development	Funding	Community Service	Other
Audubon Naturalist Society		X		X		X	
Cintia Cabib – Doc. Filmmaker		X					
Chesapeake Bay Foundation			X				
Clean Air Partners-MW-COG	X	X		X			
DC Greenworks		X	X			X	X
District Department of the Environment	X						
Earth Day Network	X	X					
Green Living Project		X					
Groundwork Anacostia River DC	X	X	X	X	X	X	X
Izaak Walton League						X	
J. Craig Venter Institute		X		X			
Kid Power Inc.	X	X				X	
Koshland Science Museum				X			
Live It Learn It							X
National Env. Ed. Foundation	X			X			
National Geographic Society	X	X	X	X			X
NOAA	X	X	X	X			X
North American Assoc. for Env. Ed.				X			
Project Learning Tree	X			X	X		
Saturday Env. Academy			X	X		X	X
U.S. Botanic Garden	X	X		X			
U.S. Environmental Protection Agency	X	X		X	X	X	X
U.S. Forest Service	X						

WATER – includes stormwater, rivers, aquatic wildlife

Organization	Curricular Resources	School-based Presentations	Field Experiences	Professional Development	Funding	Community Service	Other
Alice Ferg. Found.	x		x	x		x	
Anacostia Watershed Society		x	x	x		x	
Audubon Naturalist Society		x	x	x	x	x	
Cintia Cabib – Doc. Filmmaker		x					
Ches. Bay Found.	x		x	x		x	x
Ches. Bay Trust							
City Blossoms	x						
DC Greenworks		x	x			x	x
DC Historic Preserv. Office - Archaeology	x	x	x	x		x	
DC Water	x	x	x	x		x	
District Department of the Environment	x	x	x	x	x	x	x
Earth Day Network	x	x					
Earth Force	x	x	x	x	x		
Env. Concern	x	x	x	x			
George Washington Carver Outdoor Sch.	x		x			x	
Green Living Project	x	x					
Groundwork Anacostia River DC	x	x	x	x	x	x	x
Izaak Walton League	x	x				x	
J. Craig Venter Inst.	x	x		x			
Kid Power Inc.	x	x				x	
Live It Learn It	x	x	x	x			x
Living Classrooms	x	x	x			x	
National Aquarium			x	x			
Nat. Env.Ed. Found.	x			x	x		
National Geo Society	x	x	x	x			x
NOAA	x	x	x	x			x
National Park Serv.	x	x	x	x		x	
Natural Partners	x						
North American Assoc. for Env. Ed.				x			
Project Learning Tree	x			x	x		
Saturday Env. Acad.			x			x	
Student Cons. Assoc.		x	x	x		x	
U.S. Botanic Garden	x			x			
U.S. EPA	x	x		x	x	x	x
U.S. Forest Service	x		x				
UDC's Master Gardener Program	x	x					
Wash. Youth Garden	x	x	x				

LAND – includes plants, soil, urban planning, terrestrial wildlife

Organization	Curricular Resources	School-based Presentations	Field Experiences	Professional Development	Funding	Community Service	Other
Alice Ferguson Foundation	x	x	x	x		x	
Arcadia Center for Sustain. Food & Ag.			x				
Audubon Naturalist Society		x	x	x	x	x	
Cintia Cabib – Doc. Filmmaker	x	x					
Casey Trees	x	x				x	
Chesapeake Bay Foundation	x		x	x		x	x
City Blossoms	x	x	x	x		x	x
DC Department of Parks and Recreation	x		x			x	
DC Greenworks		x	x			x	x
DC Historic Preserv. Office - Archaeology	x	x	x	x		x	
District Department of the Environment	x	x	x	x	x	x	x
Earth Day Network	x	x			x		
George Washington Carver Outdoor Sch.	x		x			x	
Green Living Project	x	x					
Groundwork Anacostia River DC	x	x	x	x	x	x	x
J. Craig Venter Inst.		x			x		
Kid Power Inc.	x	x				x	
Live It Learn It	x	x	x	x			x
Living Classrooms	x	x	x			x	
National Aquarium			x	x			
National Env. Ed. Foundation	x			x			
National Geo Society	x	x	x	x			x
National Park Serv.	x	x	x			x	
Natural Partners	x	x	x	x	x	x	x
North American Assoc. for Env. Ed.				x			
Project Learning Tree	x			x	x		
Saturday Env. Academy			x			x	
Student Conserv. Association		x	x	x		x	
U.S. Botanic Garden	x	x		x			
U.S. EPA	x	x		x	x	x	x
U.S. Forest Service	x		x				
UDC's Master Gardener Program	x	x					
Wash. Youth Garden	x	x	x				

RESOURCE CONSERVATION – includes energy, waste, recycling

Organization	Curricular Resources	School-based Presentations	Field Experiences	Professional Development	Funding	Community Service	Other
Alice Ferguson Foundation	X	X	X	X		X	
Anacostia Watershed Society		X	X	X		X	
Audubon Naturalist Society		X	X	X	X	X	
Cintia Cabib – Doc. Filmmaker		X					
Chesapeake Bay Foundation	X		X	X		X	X
City Blossoms	X		X	X		X	
DC Department of Parks and Recreation	X		X			X	
DC Greenworks		X	X			X	X
DC Historic Preserv. Office - Archaeology	X	X	X	X		X	
DC Office of the State Super. of Ed.			X				
District Department of the Environment	X	X	X	X		X	X
Earth Day Network	X	X					
Env. Concern		X					
George Washington Carver Outdoor Sch.	X		X			X	
Green Living Project	X	X					
Groundwork Anacostia River DC	X	X	X	X	X	X	X
Izaak Walton League	X	X				X	
J. Craig Venter Inst.		X		X			
Kid Power Inc.	X	X				X	
Live It Learn It	X	X	X	X			X
Living Classrooms	X	X	X			X	
National Env. Ed. Foundation	X			X			
National Geo Society	X	X	X	X			X
NOAA	X	X	X				X
National Park Serv.	X	X	X				
Natural Partners	X	X	X	X	X	X	X
North American Assoc. for Env. Ed.				X			
Project Learning Tree	X			X	X		
Saturday Env. Academy			X			X	
U.S. EPA	X	X		X	X	X	X
U.S. Forest Service	X			X	X		
UDC's Master Gardener Program	X	X					
Wash. Youth Garden	X	X	X				

HEALTH – includes outdoor physical activity, gardens, food

Organization	Curricular Resources	School-based Presentations	Field Experiences	Professional Development	Funding	Community Service	Other
Arcadia Center for Sustain. Food & Ag.	x	x	x				x
Audubon Naturalist Society						x	
Cintia Cabib – Doc. Filmmaker	x	x					
Casey Trees	x	x				x	
Chesapeake Bay Foundation	x			x		x	x
City Blossoms	x	x	x	x		x	x
Clean Air Partners-MW COG	x	x		x			
DC Department of Parks and Recreation	x					x	
DC Greens				x			
DC Greenworks		x	x			x	x
DC Historic Preserv. Office - Archaeology						x	
DC Office of the State Super. of Ed.	x	x	x	x	x		
District Department of the Environment	x			x	x		x
Earth Day Network	x	x			x		
Green Living Project	x	x					
Groundwork Anacostia River DC	x	x	x	x	x	x	x
J. Craig Venter Inst.				x			
Kid Power Inc.	x	x				x	
Live It Learn It							x
National Env. Ed. Foundation	x			x			
National Geo Society	x	x	x	x			x
National Park Serv.			x			x	
North American Assoc. for Env. Ed.				x			
Project Learning Tree	x			x	x		
Saturday Env. Academy			x			x	x
Student Conserv. Association		x	x	x		x	
U.S. Botanic Garden	x			x			
U.S. Forest Service	x						
U.S. Environmental Protection Agency	x	x		x	x	x	x
UDC's Master Gardener Program	x	x			x		
Washington Youth Garden	x	x	x	x			

OTHER RESOURCES

Organization	Curricular Resources	School-based Presentations	Field Experiences	Professional Development	Funding	Comm. Service	Other
21st Century School Fund		Exterior space planning				Schoolyard planting	Master planning
City Blossoms	Community steward.	arts and nature		arts		outdoor public arts projects	arts-based lessons
DC Historic Preser. Office - Archaeology	Archaeo, indigenous culture	Archaeo, indigenous culture	Archaeo, indigenous culture	Archaeo, indigenous culture			
Earth Day Network					EE	Earth Day	school greening
Earth Force	Env. service-learning	Youth env. action		Env. service-learning			
Env. Concern		Pollinators, conserv.					
G. Wash. Carver Outdoor Sch.				Historical nature walks			
Groundwork Anacostia River DC							comm. outreach & engage.
J. Craig Venter Institute		Metagenomics		Metagenomics genomics			
National Council for Science and the Env.		Scientific research presentations				Env research & elem. sch. outreach	
National Env. Education Foundation	Weather			weather			
National Geographic Society	Tech, science, soc. studies						geo., soc. studies
National Park Service	General science, astronomy					visitor services	custom programs, loc history
North Amer. Assoc. for EE					Capacity building		Interdiscip education
Project Learning Tree	Biotech.			Green Schools	Improve Env.		
U.S. Botanic Garden							botanic education

Appendix G. Case Studies of Environmental Literacy in Schools

There are many elementary, middle, and high schools in the District of Columbia that already engage their students in activities and lessons that foster environmental literacy. Below are just a few examples of DC Public Schools and Public Charter Schools across the District's eight wards that have varying degrees of engagement and integration of environmental literacy. Many partner with organizations listed in Appendix F.

Kimball Elementary School (Ward 7)

Kimball Elementary School partners with Living Classrooms – National Capital Region (LC-NCR) on two different grant-funded environmental education programs that are aligned with science and Common Core standards. The first program is BayWatch, a two-year program for the third, fourth and fifth grades funded by the District Department of the Environment. Over the course of the 2011-2012 and 2012-2013 school years, each grade will go on a field trip to a different part of the Chesapeake Bay watershed. Before and after each field trip, LC-NCR educators come into the classroom and teach an hour long lesson that ties into the lessons taught on the field trip. BayWatch begins with third grade students studying and visiting their local stream, expands on watershed concepts in fourth grade by focusing the students' attention to the Anacostia and Potomac Rivers, and then asks fifth grade students to look at the larger picture of the Chesapeake Bay watershed. This program is considered a "Meaningful Watershed Educational Experience" as defined by the Chesapeake 2000 agreement.



Kimball Elementary School's fifth grade also participates in LC-NCR's schoolyard greening program, District Schoolyard Stewards. This program, funded by the U.S. Environmental Protection Agency, is a continuation of a previous three year program, Schoolyard Stewards, funded by the National Oceanic and Atmospheric Administration (NOAA). As a part of this program, students learn about the Chesapeake Bay watershed and how their school can reduce storm water runoff and pollution entering the local rivers. In May, students will plant an extension of the current storm water management gardens. In addition to the in-class lessons and planting day run by LC-NCR staff, the teachers have also been given several lessons that they can teach in the outdoor space (living classroom) to supplement their curriculum.



Elsie Whitlow Stokes Public Charter School (Ward 5)

Established in 1998, the Elsie Whitlow Stokes Community Freedom Public Charter School prepares 350 culturally diverse pre-school and elementary school students in the District of Columbia to be leaders, scholars and responsible citizens who are committed to social justice. With a dual focus on academic excellence and community service, the Stokes School accomplishes its mission by creating an environment of achievement, respect and non-violence.

At the Stokes School, environmental literacy is integrated in the school's curriculum and its Wellness Policy. Each trimester, every grade level travels on field trips that further enhance the class's study of its specific thematic unit. Kindergarten and first grade

students have visited the Aquatic Resources Education Center, where they learned about amphibian life cycles and other aquatic species that live in the District's waterways. Other grades visit the National Zoo and Smithsonian Museums. In the fourth grade, students visit the Alice Ferguson Foundation's Hard Bargain Farm, where they learn about farm life, food production, and go canoeing on the Potomac River. This program includes a residential component, allowing the students to stay overnight in the farm's dormitory-style cabins. Fifth grade students travel further within the Chesapeake Bay watershed to Virginia Beach. This field experience includes dolphin viewing as part of the school's unit on oceans. Sixth graders travel internationally to Panama and Martinique to experience another culture and practice speaking Spanish or French.

In the 2010, the Stokes School launched its Greening Stokes initiative, which trains students to become environmental stewards. Students helped implement a campus-wide recycling program and built a compost heap for kitchen and garden waste. The school also has an Energy Patrol Group, students who volunteer to raise environmental awareness and suggest ways to improve the school's environmental impact. The school worked with Farm to Desk DC, a Seedling Project, to align lessons revolving around the school's garden and food issues with the Common Core State Standards. The Stokes School received a grant in 2012 from the Office of the State Superintendent of Education to continue its gardening efforts.

Hardy Middle School (Ward 2)

Hardy Middle School sits on the outer edges of Georgetown, near Glover Park. The school building was built in 1933 and was recently renovated and reopened in 2007. Beginning in 2008, the science department envisioned the creation of an outdoor classroom for students, with the goal of developing an exciting space that encourages lessons that allow students to investigate problems and determining solutions, and also serving as a connection between the school and community. In 2010, the science teachers successfully applied for a District Department of the Environment RiverSmart Schools grant to build a model wetland and install a cistern that would capture stormwater runoff from the new tennis

courts and nearby 35th Street. In Spring/Summer 2012, the Monarch Sister Schools program will support the butterfly garden and DC Greens will assist with the creation of the vegetable garden next to the tennis courts. The English department is working to be in charge of signage for the various elements of the gardens. In Fall 2012, the school hopes to add a student constructed weather station and alternative energy power station to the outdoor classroom, as well as create an environmental certificate program for Hardy MS students, enabling them to have a better sense of their community and the natural world and become environmental stewards.



Paul Public Charter Middle School (Ward 4)

The mission of Paul Public Charter School is to educate our students and to develop in them the capacity to be responsible citizens, independent thinkers, and leaders. The arts are integrated into each discipline wherever possible. Students graduate from Paul PCS with a comprehensive knowledge that equips them for success in high school.

For two years, Paul PCS has been working with Project Learning Tree's *GreenSchools!* Program. According to Paul Middle School's Science Coordinator, *GreenSchools!* students have accepted the call of action to change the mentality of youth and adults regarding their environmental practices at school, in the community, and at home. Beginning with the sixth grade class in 2010, the program now reaches two grade levels and will involve the whole school by 2013. Throughout the year, students conduct investigations at their school, and have made improvements to their school by installing energy saving devices, planting trees, and more. Paul Middle School students have also mentored younger students at Barnard Elementary, a nearby DC Public School. Together, students from both schools installed organic, raised-bed gardens and dedicated a new outdoor classroom at Barnard.



Paul PCS also has a Project Week each year, where teachers have the freedom to conduct a project with their students as long as it is linked to District school standards. An example of a past project has been taking soil and water measurements in Rock Creek Park. Students also presented their project at the National Science Teachers Association conference in March 2010.

Wilson Senior High School (Ward 3)

The Woodrow Wilson Senior High School Career Technical Education (CTE) Environmental Pathway is an interdisciplinary approach to understanding the planet through the required sciences while focusing on environmental stewardship and meeting the challenges of our future. This four-year long pathway starts with mandatory Biology for all ninth graders, followed by Environmental Science: Sustainable Earth, Chemistry for a Sustainable Future, Marine Sciences: Sustainable Oceans, Urban Ecology: Sustainable Cities, and a capstone project or internship. This project started in the 2011-12 school year, and 300 students are enrolled in this track. There are ten sections of the Sustainable Earth class with students from 10-12th grades enrolled. Courses are supplemented by after school clubs like the NOAA Enrichment in Marine Sciences and Oceanography (NEMO) and DC EnvironMentors.



César Chávez Public Charter Schools for Public Policy: Chavez Prep (Ward 1), Parkside (7), Capitol Hill (Ward 6)

The mission of the César Chávez Public Charter Schools for Public Policy is to provide a high quality public school option for young people residing in the District of Columbia's most impoverished and underserved communities. The Chávez schools prepare D.C. students to succeed in competitive colleges so that they can use their lives to make a positive difference in the world.

For the last five years, all of the ninth grade students from the Chávez schools have investigated water pollution in the District of Columbia. As a response to the Common Core State Standards requiring that



students apply knowledge to real world problems, the schools created a curriculum unit that investigates the water quality issues in the District of Columbia. In Fall 2011, students participated in a day-long investigation "in the field" that included visits to five locations. At these sites, students learned about water pollution concepts and how each organization is trying to mitigate and curb pollution to our local water ways. The program supported in-class instruction that addressed the science standard on watersheds and the water cycle.

The five sites that all groups visited included the following:

- 1) Aquatic Resources Education Center in Anacostia Park (District Department of the Environment): Students explored local aquatic wildlife exhibits and discussed pollution's impacts on those wildlife species.
- 2) Trash trap at Watts Branch (Anacostia Watershed Society): Students saw first-hand one way that the District is addressing trash pollution in the Anacostia River.
- 3) Kenilworth Aquatic Gardens (National Park Service): Students conducted water quality tests.
- 4) Blue Plains water treatment facility (DC Water): Students were given a tour and learned about water treatment in the District.
- 5) Students also toured a green roof and were provided information about low impact development strategies that are being used to minimize stormwater runoff in the District.

Most students were required to write a research paper to reflect on the larger concept of water pollution and the various ways agencies and organizations are addressing water pollution. Other students made presentations, and one group wrote an editorial to the *Washington Post*.

Teacher input on this program has been extremely positive. They enjoy the real world connections to learning, and they believe these field experiences have instilled behavior changes in some students.

Thurgood Marshall Public Charter High School (Ward 8)

Thurgood Marshall Academy (TMA) is a college preparatory public charter high school in Washington, DC. Its mission is to prepare students to succeed in college and to actively engage in our democratic society. TMA has been a champion in the environmental education and green schools movement both regionally and nationally over the past five years. In 2007, the students at TMA decided to do something about the lack of fresh food options in the surrounding area by breaking ground on what is today a half-acre organic school garden. The garden (named "The Great Garden of Anacostia") sparked a broader environmental initiative at the school launched on Earth Day 2008 with the support of Earth Day Network. The school also boasts a 2.8 gigawatt solar panel system, a LEED certified (silver) gymnasium, and energy efficient power strips. Through the Project Learning Tree *GreenSchools!* program, students at TMA conducted a school yard inventory which resulted in a decision to install a water-saving drip irrigation system as well as a school wide composting program. TMA has also hosted numerous local and national events including the DC School Garden Week and DC Farm to School Week Kick-Off event in 2010 and the U.S. Environmental Protection Agency and U.S. Postal Service's Go Green! Stamp unveiling in 2011.

