

# 2017 Environmental Education in the Dan River Basin



## EXECUTIVE SUMMARY

### Introduction

Environmental education (EE) and sustainability practices have been emerging as an important trend in 21st century education. A growing body of research and practices indicate that green schools can save money, improve health, and boost academic achievement. In 2017, the Dan River Basin Association (DRBA) emailed 6,000 pre-K through grade 12 teachers, principals, school board members and school administrators at both private and public schools a 12-question survey. The survey questions asked participants to identify factors that contributed to both success and challenges in implementing environmental education and sustainability efforts, to identify what current programs exist and what future programs they would like to have, and what they perceived to be their greatest barrier to providing environmental education in their school. Responses were received from 314 total participants, a 5% response rate, representing 108 separate schools from 11 city/counties. The survey was open from December 15, 2016 through February 28, 2017.

### Key Findings

#### **Schools are implementing sustainability efforts, but many have not gone beyond what is required.**

A significant number of schools (65%) reported energy saving as having been initiated, while 69% also reported in being involved with waste/recycling. However, only about 13% have implemented water conservation strategies and 5% or less have implemented green construction, green purchasing or renewable energy efforts.

#### **Many schools are not connecting curriculum to promotion of sustainability efforts.**

Less than 40% reported curricular materials as being the number one contribution for supporting and promoting environmental education and sustainability efforts at their school and only 29% reported having posted green informational signs in the school. Installing a school garden ranked as the number one step being taken to provide outdoor learning (53%), but only 28% had instituted the garden program into their curriculum, and only 8% reported started a farm to school program.

#### **There is significant interest in EE and sustainability, but three challenges stand in the way.**

Over one third of the survey respondents reported their school has access to an outdoor classroom and 33% had built trails on campus. Nearly half of the schools (49%), reported offering in-classroom environmental education presentations for students. Schools are recycling, building gardens and have horticulture and agriculture clubs. Close to 40% of schools have provided outdoor recreational or environmentally-focused field trips for students. But when asked what are the major challenges in providing EE and sustainability initiatives, nearly 65% said lack of funding or budget and over 50% said there was no strategic plan. Nearly 40% noted not having any time for planning these initiatives and lack of training for staff. Only 20% of participants felt there wasn't enough interest in EE and sustainability efforts.

“Environmental education needs to be incorporated into all subject areas. Right now it's seen as the domain of science teachers but if environment ed isn't also being tied into language arts and math instruction, an opportunity to make all three subjects more relevant for today's learners is being lost.”  
Teacher, Franklin County, VA

“We need to make all staff aware of the programs we do have in place already and seek input as to which programs they would like to see implemented, but there's no time or staff to do that.”  
Administrator, Caswell County, NC



“Thanks for all you do. As an educator, I would welcome regular e-mail updates from you, including suggestions and ideas for implementing environmental education in a non-science class.”  
Teacher, City of Danville, VA

We need to establish a ecology based instruction--bringing the science, environmental, climate, and stewardship concepts together.  
Teacher, Pittsylvania County, VA

“Are there grants available for teachers to implement environmental related projects at our school?”  
Administrator, Martinsville, VA

“I would really like to see a push for awareness and training in our area!”  
Teacher, Halifax County, VA

“We used to recycle paper in each classroom, a teacher used to be over it and she left. So why did it stop just because she left?”  
Teacher, Henry County, VA

## Survey Highlights

The survey demonstrates that there is a significant interest in environmental education (EE) and sustainability practices in our schools throughout the Dan River Basin with 100% of survey respondents wanting more information and/or assistance.

Schools that have implemented successful and numerous environmental programs and sustainability efforts share key characteristics: 1) They have teachers who are knowledgeable about environmental issues and/or environmental education, 2) An administrator or teacher is willing to be the driving force behind getting the programs started and funded and, 3) There is full support from their administration.

A majority of the schools are working to lower their environmental impact through energy saving and waste reduction, which is required by the state through codes, standards, or percentage-based targets. Half the schools have installed a school garden and instituted a garden program into the curriculum. Relatively few schools are incorporating green building practices or renewable energy into new construction or renovations. The integration of EE in the curriculum is beginning, but is not well developed. And, the data indicates that resources available for EE and sustainability are not equitably distributed, which makes it more difficult for financially disadvantaged schools and districts to become greener.

Reducing environmental impact is clearly a top priority in a large number of schools. 65% of the schools reported energy saving as having been initiated, while 69% also reported in being involved with waste/recycling.

Only 39% of the participants reported curricular materials as being the number one contribution for supporting and promoting environmental education and sustainability efforts at their school.

Installing a school garden ranked as the number one step being taken to provide outdoor learning amongs schools (53%), but only 28% had instituted the garden program into their curriculum, and only 8% reported started a farm to school program.

34% reported having built an outdoor classroom on their school campus and 33% had built trails on campus.

Only 29% reported having posted green informational signs in the school.

Nearly half of the schools (49%), reported offering in-classroom environmental education presentations for students.

Students learn about aquatic insects and their importance through an in-classroom presentation.

For high schools, an AP Environmental Science Course ranked as the number one practice the school uses to incorporate environmental education and sustainability into the curriculum (33.5%), with an additional 27% choosing an environmental or sustainability class as their method.

31% selected direct integration of environmental and sustainability concepts across the curriculum as their practice for incorporating EE into their curriculum. Only 21% of the schools have a written definition of environmental literacy.

Providing EE and sustainability faces challenges from lack of funding or budget (67%), no strategic plan for these programs (55%), and schools in high poverty areas where students and families have higher concerns and needs (54%). Other challenges following closely behind are no time for planning these programs (38%) and lack of staff training (37%).

“Many things could be done to improve the sustainability of the school and school system. Ideas have been offered, but never acted upon. Funding is an issue. Students have done many projects on how the school could improve its sustainability, but none have been met by administration with much enthusiasm.”  
Teacher, Patrick County, VA

“We would love to take students on a local field trip to become more aware of their environmental needs and sustainability. We are also very interested in classroom materials for Going Green. Please help us!”  
Teachers, Rockingham County, NC

“We need funding for initiatives such as trails and gardens, and the manpower to help start the process. At an elementary school, we can't really start some of these without support. Even high school students helping with the planning and initial digging of a garden would be beneficial.”  
Administrator, Stokes County, NC

# Regional Highlights

## Caswell County, NC

Curricular materials and district policies have contributed most to helping to promote EE and sustainability initiatives. However, 100% of respondents reported needing a county-wide EE and sustainability plan, funding to implement the plan and assistance with planning and getting a county-wide EE and sustainability initiative moving forward.

## City of Danville, VA

More than half of respondents noted that district-level policies and green operations have helped to promote EE and sustainability, with most noting that it has been started by dedicated students and teachers. Less than a third of respondents noted that EE signage was posted in their schools and less than 25% stated that EE is offered in-classroom. Close to 100% noted that most programs and initiatives are happening haphazardly. Planning and training were also mentioned as critical by almost 80% of respondents. Every respondent said they wanted more EE and sustainability initiatives.

## Franklin County, VA

Almost 25% of respondents noted that they were unaware or didn't know of any sustainability initiatives at their schools in Franklin County and less than a third of schools are implementing professional development or green operations. But more than half of the respondents noted that their school offers nature-related field trips and outdoor classrooms. Close to 100% of teachers responded that they are integrating EE across curriculum, offering EE elective and AP classes and providing information about outdoor recreational activities.

## Halifax County, VA

Less than half of the respondents said that curriculum, district policies, and professional development are helping to promote EE or sustainability in their schools. More than 40% of schools have initiated a school garden and water conservation programs. More than 50% of schools have built outdoor classroom and/or trails near schools. Respondents noted that most of the EE and sustainability initiatives are handled by individuals who have a passion for the environment and without those individuals, those programs and initiatives would likely end.

## Henry County, VA

Curriculum materials and green operations have helped to promote EE and sustainability according to 33% of respondents, but less than 10% report that they have received any professional development. Schools have instituted school gardens, farm to school initiatives, trails and outdoor classrooms at 50% of the surveyed schools and 98% reported they provide in-classroom EE and information about local outdoor recreational opportunities. Programs they would like to most incorporate, 85% wanted a rain barrel program, 75% wanted outdoor classrooms and 70% wanted to start or continue Trout in the Classroom.

## City of Martinsville, VA

Only 1% noted that professional development or green operations have been implemented and less than 20% noted that there is a community garden or water conservation program at their school. The most utilized EE program was noted as Trout in the Classroom by 50%. Almost 100% of respondents noted the major challenges as lack of funding, time, and knowledgeable staff. Respondents wanted a trail on campus (80%), nature-related field trips (80%), in-classroom presentations (82%) and recycling program (85%).

## Patrick County, VA

Almost 50% of teachers said having curricular materials was a major factor in promoting sustainability and EE. Less than 25% survey takers said their schools have started a community garden, water conservation programs or recycling. However, over 30% said green information is posted both inside and outside of the school and they have access to an outdoor classroom. Patrick County was one of the few school systems which noted having a written definition of environmental literacy.

## Pittsylvania County, VA

Pittsylvania County has a STEM Academy and teachers have some EE curricular materials, but very little is done directly related to environmental education. Two teachers commented that no EE was happening in their schools. 14% said professional development was available. Less than 20% noted that their schools post green information in schools and none said there was information posted outside on campus. Almost 60% said they wanted to initiate a school garden, 53% want nature-related field trips and 63% want a recycling program.

## Rockingham County, NC

Curriculum materials (41%) and district level policies (38%) are factors promoting EE and sustainability however, close to 10% of respondents were not aware of any promotional efforts in their schools. Only 1% said there was any water conservation efforts, however, 54% are offering Trout in the Classroom and/or in-classroom EE presentations. Challenges mentioned were lack of funding (70%) and no strategic plan (80%). Close to 40% want to initiate a school garden, nature-related field trips, and build outdoor classrooms. Close to half of the respondents asked for more information and assistance .

## Stokes County, NC

Curricular materials (33%) was the top factor promoting EE and sustainability. A quarter of respondents said their school has initiated water conservation strategies, but less than 10% noted renewable energy or green purchasing. Close to 70% said they have access to a school garden, but only 25% are using that food in the cafeteria or cooking classes. Less than 20% said they have access to an outdoor classroom or trails on campus. Participants most want to have an outdoor classroom (60%) and in-classroom presentations (50%).

# Looking Forward

With drastic state budget cuts to environmental education and protection programs and reduced federal funding and policy changes related to conservation and protection, it is critical that regional and local partnerships form and take a leadership role in ensuring our youth become advocates for our valuable, local natural resources.

100% of survey participants showed interest in implementing effective green strategies both inside and outside of their school and providing impactful environmental education programs for their students. Unfortunately, almost 100% also stated funding/budget, no planning, inadequate staff skills, and lack of time as major barriers to implementation.

Moving forward, the following strategies are recommended by DRBA to ensure teachers and administrators have the capacity and resources to provide environmental education and sustainability initiatives for their students and ultimately protect and conserve our natural resources for future generations.

- Identify both short and long-term goals for each school and school district.
- With board, staff, administrator and public input, develop district strategic plans.
- Develop professional staff development training opportunities.
- Design a resource for teachers and schools to easily find funding for EE program and green construction projects.
- Design EE curricular materials for all grade levels and subject areas that support SOL and CORE requirements.
- Provide support to manage, plan and implement EE and sustainability initiatives for all school districts.



## 10 Steps to a Green-Focused School

### Partnerships

Use resources and opportunities available to enhance learning in and out of the classroom.

### Organization

Make EE and sustainability a high priority, develop a plan for implementation and report progress regularly.

### Leadership

Provide support responsible for developing and directing the school's overall plan.

### Resource Efficiency

Monitor and improve use of power, water and waste and reduce usage and document savings.

### Facilities

Use best practices for renovation and construction that conform to green standards.

### Healthy Operations

Adopt policies for purchasing, hazardous waste and pest management and school wellness.

### Nutritious Food

Evaluate and improve the school's food program to focus on good nutrition and health and local, seasonal offerings.

### Curriculum

Adopt an environmental literacy definition and incorporate EE into all fields of study and professional development.

### Extra-Curricular Programs

Provide opportunities to learn outside the classroom and strengthen ties to the community.

### Students

Include students in leadership roles focused on environmental sustainability.

DAN RIVER BASIN



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