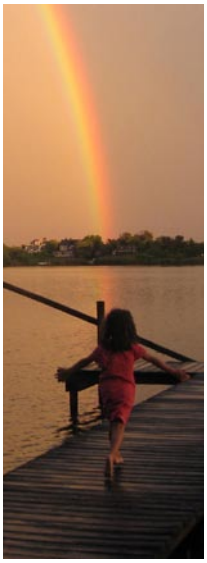
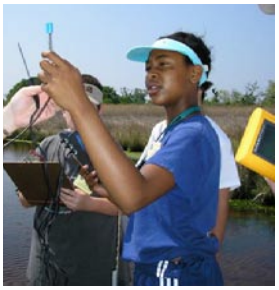
Maryland Partnership for Children in Nature

Report and Recommendations to Governor Martin O'Malley










April 2009

Maryland
Smart, Green & Growing

Maryland Partnership for Children in Nature
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Vision for Children in Nature

From early childhood, Maryland's children and their families play and explore nature in safe neighborhood green spaces and parks, access local streams and waterways, and follow trails that link natural areas to school grounds and other community open spaces.

Throughout the school year, students use those same areas for outdoor learning and academic study, applying skills and knowledge to meaningful environmental issues investigations. They pose solutions to local environmental problems, and engage the surrounding communities in implementation of an action plan.

All Maryland schools and their grounds serve as community models for green landscape design and operation, energy efficiency and sustainability.

The experiences and lessons gathered throughout their developing years – through classroom learning and outdoor experiences – stay with Maryland's children throughout their lifetimes, preparing them to take active roles in addressing the complex environmental and economic challenges facing our world, and instilling in them a sense of responsibility for and stewardship of the open spaces, waterways and natural resources that so richly shaped their childhood.

EXECUTIVE SUMMARY

Introduction

Recognizing the urgency in ensuring that Maryland's young people have the opportunity to connect with nature and grow to become informed and responsible stewards of our environment, Governor Martin O'Malley established the Maryland Partnership for Children in Nature by Executive Order in April 2008 (Appendix A).

Co-chaired by Maryland Department of Natural Resources Secretary John Griffin and State School Superintendent Dr. Nancy S. Grasmick, the Partnership was charged with developing and implementing an environmental literacy plan as well as a plan to provide youth with structured and unstructured opportunities for play, outdoor recreation, learning and scientific study.

This report contains the goals and strategies developed by the 15-member Partnership and 80 work group members to achieve the vision of Governor O'Malley's Executive Order, as well as approaches for developing funding streams and public/private partnerships to implement those strategies.

Background

In 2007, the Maryland Department of Natural Resources (DNR) and the Maryland State Department of Education (MSDE) joined forces as part of a national movement to reconnect children with nature. This movement was sparked in large part by a groundbreaking book, *Last Child in the Woods* by Richard Louv. The book explores the negative effects that the dramatic decline in time spent outdoors in unstructured play is having on our children.

Described as "nature deficit disorder," the disassociation of children and nature has been linked to a wide range of behavioral and health issues, including childhood obesity, attention deficit disorder and depression. While most adults over the age of 30 spent large portions of their childhood outdoors in spontaneous and unstructured play with other kids, today's youth are more likely to be inside watching television or playing video games.[1]

Research also shows that the positive impacts of spending time in nature on a child's physical, cognitive and social development may be significantly greater than imagined.[2,3] National experts increasingly point to the need for youth to experience frequent, unstructured play in the outdoors that emphasizes fun, discovery, creativity and spontaneity.

DNR formed an internal Children in Nature Matrix Team, which included representation from employees across the agency, to develop a comprehensive strategic plan (Appendix B), which provided the foundation of the Governor's Executive Order.

Nearly concurrent with the activities of the Department, a group of environmental education providers and advocates also raised the banner of children in nature, launching the No Child Left Inside Coalition. The Coalition formed a broad based network of 47.5 million individuals and 1,112 organizations committed to environmental literacy and more time spent outdoors by children.

A primary mission of the Coalition was the support of federal legislation introduced in 2008 and 2009 by Maryland Representative John Sarbanes and Rhode Island Senator Jack Reed titled the *No Child Left Inside Act* (H.R. 3036 and S. 1981) (Appendix C). If passed, the No Child Left Inside Act will provide new federal funding for outdoor learning activities and high-quality environmental education to states that develop a certified Environmental Literacy Plan.

The Maryland Partnership for Children in Nature held its first meeting in August 2008 at the Arlington Echo Outdoor School. Hundreds of environmental and youth advocates from across Maryland were on hand for an event to help Governor O'Malley kick-off the Partnership, including Representative Sarbanes.

From August 2008 through February 2009, the Partnership held monthly meetings and numerous Workgroup sessions to develop a Children in Nature Plan as charged by the Governor's Executive Order.

Maryland is not the first state to address the children in nature crisis; however, it is the first to combine the tenets of fostering a love and connection to nature through outdoor play with the hands-on

1 **By Oliver Pergams, Ph.D. and Patricia Zaradic, Ph.D.**"Kids picking TV over trees" June 2007

2 Burdette, Hillary L., M.D., M.S.; and Robert C. Whitaker, M.D, M.P.H. "Resurrecting Free Play in Young Children: Looking Beyond Fitness and Fatness to Attention, Affiliation and Affect." © 2005 American Medical Association.

3 Taylor, Andrea Faber; and Frances E. Kuo. "Is Contact with Nature Important for Healthy Child Development? State of the Evidence." In Spencer, C. & Blades, M. (Eds.), Children and Their Environments: Learning, Using and Designing Spaces. Cambridge, UK: Cambridge University Press, 2006.

knowledge benefits of experiential environmental education. It is the comprehensive nature of this approach that the Partnership believes is critical to the success of achieving the Governor's vision of a future Maryland that is loved and cared for by the next generation of stewards.

Vision

The Partnership's vision is multi-faceted:

> From early childhood, Maryland's children and their families play and explore nature in safe neighborhood green spaces and parks, access local streams and waterways, and follow trails that link natural areas to school grounds and other community open spaces.
>
> Throughout the school year, students use those same areas for outdoor learning and academic study, applying skills and knowledge to meaningful environmental issues investigations. They pose solutions to local environmental problems, and engage the surrounding communities in implementation of an action plan.
>
> All Maryland schools and their grounds serve as community models for green landscape design and operation, energy efficiency and sustainability.
>
> The experiences and lessons gathered throughout their developing years – through classroom learning and outdoor experiences – stay with Maryland's children throughout their lifetimes, preparing them to take active roles in addressing the complex environmental and economic challenges facing our world, and instilling in them a sense of responsibility for and stewardship of the open spaces, waterways and natural resources that so richly shaped their childhood.

Research

In an effort to better understand the quantity and types of programs, opportunities, and policies that are in place to support the connection of children to nature, the Partnership relied on several sources of data. First, the Community and Public Lands workgroup conducted a review of current efforts and prepared gap analyses in each of the key areas of the Governor's Executive Order. Second, the Environmental Literacy Working Group conducted a review of current environmental education efforts in Maryland schools. In addition, two surveys were administered during the plan development process. A Children in Nature Survey was developed and initiated by the Community and Public Lands Working Group and administered by the Chesapeake Bay Trust to establish baseline levels for many of the objectives contained in the Governor's Executive Order. A second survey was initiated and conducted by the Chesapeake Bay Trust to collect data on public support for outdoor learning relative to other pressing environmental issues. The results of these surveys are discussed in section 2.0 of the report.

Overarching Themes & Key Recommendations

The Partnership and work groups agreed early on that connecting children to nature and ensuring environmental literacy will best be accomplished through a comprehensive, multi-faceted approach involving both unstructured and structured experiences for children. Thus, in developing its recommendations and strategies, the Partnership sought to use every available social structure – from the family to the school – to increase the exposure of children to nature.

Recognizing the benefits of the inter-relationship between unstructured outdoor experiences and structured curriculum-based learning, the Partnership defines environmental literacy as:

> ***students that possess the knowledge, intellectual skills, attitudes, experiences and motivation to make and act upon responsible environmental decisions as individuals and as members of their community.*** Environmentally literate students understand environmental and physical processes and systems, including human systems. They are able to analyze global, social, cultural, political, physical, economic and environmental relationships, and weigh various sides of environmental issues to make responsible decisions as individuals and as members of their community and citizens of the world.

Implementation of the recommendations, therefore, must consider both the formal education and the natural outdoor experiences of the whole child to achieve success in developing a citizenry that is schooled in environmental science, acts responsibly and in accord with a committed stewardship ethic to protect our environment and natural resources, and maintains a connection with and enthusiasm for enjoying our natural world.

Consequently, the Partnership developed a strategic plan that includes 10 major recommendations addressing three over-arching themes.

Connecting communities and families to nature

Being able to play in a natural setting is vital to a child's development. The wonders of the natural world inspire imagination, creativity, adventure and foster the connection that helps young people grow into the caring adult that will take responsibility for the long-term sustainability of our planet. Yet opportunities for nature play – and the mentors that help teach children about our environment -- are vanishing as open spaces are diminished or sequestered by development. The Partnership developed the following recommendations in support of this goal:

- Incorporate nature play spaces into community health planning, land use planning and community development design.
- Establish a Maryland Trail Development Office to: provide leadership and establish a vision for Maryland's trail system, including the coordination of multi-agency trail planning and funding, orchestration of trail advocacy, creation of a one-stop trail GIS database and website and the development of a new Maryland Trail Town Program.
- Develop a strategic state park and public lands and waterways Interpretive and Outdoor Classroom Plan, which includes the identification of funding needs to support a greater presence of park rangers and seasonal naturalist staff.

Reaching out to underserved communities that have the least access to nature

The many benefits that children derive from spending time learning and playing outdoors must not be limited to those who live communities with immediate access to vast green landscapes, public lands or open water. The positive impacts on health, physical and emotional development, and academic achievement that

come from unstructured nature play and structured environmental education opportunities are critical for all Maryland children, from rural communities to urban and suburban neighborhoods. The Partnership developed the following recommendations in support of this goal:

- Develop and implement a comprehensive program to increase access and utilization of public lands and waterways for underserved communities.
- Expand and improve the existing Civic Justice Corps (CJC) model to serve 1,000 at-risk youth statewide by 2015 with summer conservation jobs and outdoor enrichment activities.

Strengthening students' connection to nature during the school day

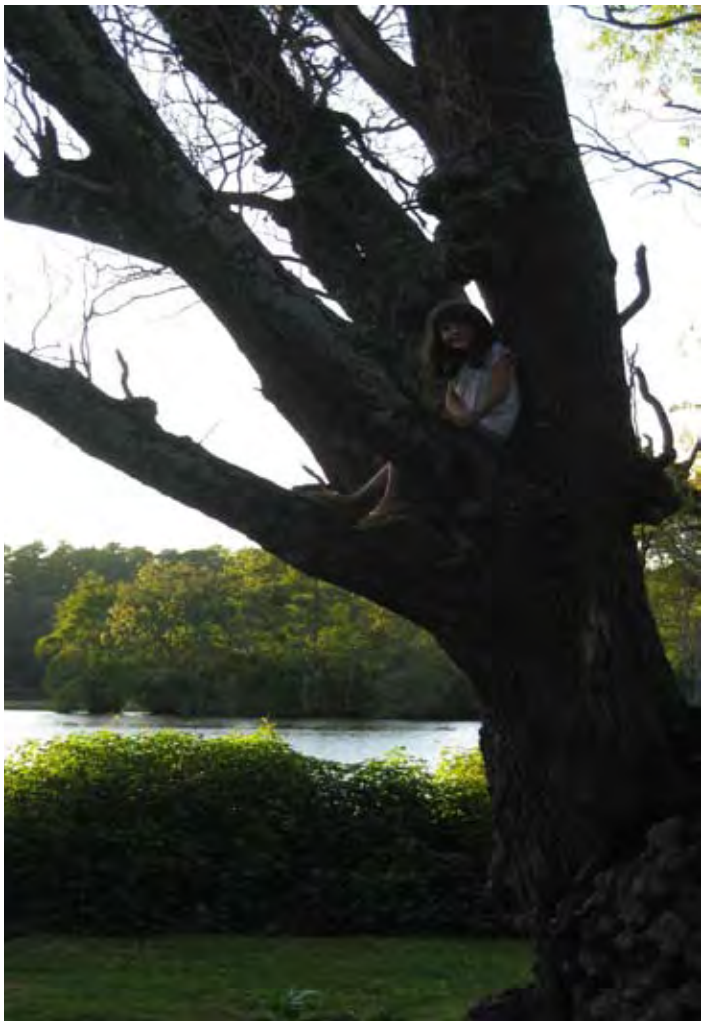
Meaningful outdoor environmental education programs are effective means for re-engaging large numbers of youth with nature in a systemic manner. Course requirements for high school graduates make a strong statement about what skills and knowledge are valued to best prepare students to live and work as productive, responsible citizens. Schoolyard habitats, already embraced by many teachers as an effective and exciting means to reach curricular and service learning goals, are a powerful and easily accessible outdoor "classroom."

To effectively use these tools, all Maryland teachers – from classroom instructors to State Park naturalists to environmental educators -- must have both the preparation and the opportunity to teach their students about the environment, whether in the classroom, on the school grounds, or in the local environment. The Partnership developed the following recommendations in support of this goal:

- Provide an annual meaningful outdoor environmental education experience for every student every year, pre-K through grade 12.
- Require for graduation that every high school student take and pass a designated course of study on environmental literacy as defined in this document.
- Establish a comprehensive initiative to green all schools and school grounds, and embed schoolyard habitat programs as integrated indoor and outdoor instructional components of the curriculum, to create opportunities for outdoor learning experiences for students and members of the community.
- Provide professional development for teachers, state park rangers and naturalists, and other service providers.
- Adopt the Maryland State Environmental Literacy Standards.

Sections 3.0 and 4.0 of the following report summarizes the response to the Executive Order by the Partnership and identifies specific actions for short- and longer-term implementation of these recommendations, lead agency responsibility and options to support those activities including partners and funding.

In addition to these recommendations, the Partnership and its working groups have identified the need for three additional, immediate next steps needed for implementation, as well as a recommendation for developing a funding plan, that are further discussed in section 5.0.



1. Introduce an Outdoor Bill of Rights for Maryland Children as a tool for engaging the public.
2. Launch a statewide campaign for Children in Nature to educate parents, teachers, and other adult leaders and caregivers about the many benefits of the broad spectrum of outdoor play and learning opportunities described in this plan.
3. Host annual Children in Nature Summits to bring together children, partners in formal and non-formal education, state park managers, local governments, and funders to celebrate and evaluate progress made towards the fulfillment of the Children in Nature Plan.

Looking Forward

The goals, strategies and visions outlined in this report suggest bold changes for Maryland's schools and communities, children and families. They are changes that, if implemented, will mark a pivotal moment in time for education, environmental stewardship and the ability of Maryland's young people to personally connect with nature in ways that promote mental, emotional and physical health and well being throughout their lives.

The Partnership will continue to meet and track progress for implementing the recommendations, refine the actions, and identify new partners, needs and resources. The continuation of this Partnership further demonstrates Maryland's commitment to supporting the goals of this Plan and the needs of our children.

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INTRODUCTION

Purpose of the Plan

The purpose of the Children in Nature Plan is to develop a comprehensive strategy to provide youth with structured and unstructured opportunities for play, outdoor recreation, learning and scientific study. This is a short and long term strategic plan that recommends steps that the State of Maryland must take to ensure that Maryland's children have the opportunity to connect with nature and grow to become informed and responsible stewards of our environment.

Nature Deficit Disorder

Across the nation, local and state agencies, schools, nonprofits, community organizations, parents' groups and others are joining forces as part of a national movement to reconnect children with nature. While most adults over the age of 30 spent large portions of their childhood out of doors in spontaneous and unstructured play with other kids, today's youth are more likely to be inside watching television or playing video games.[4] This movement was sparked by a ground-breaking book, *Last Child in the Woods*, authored by Richard Louv, which described the effects of a dramatic decline in time spent by children in the outdoors engaged in unstructured play. Louv coined the phrase, "nature deficit disorder" to describe the multitude of problems, including childhood obesity, attention deficit disorder, and depression that result when children spend less time outdoors. Emerging research also shows that, in addition to reducing the risks associated with *not* spending time outdoors, the positive impacts of spending time in nature on a child's physical, cognitive, and social development may be significantly greater than imagined.[5],[6]

Why is this important?

From the tidal marshes of the Chesapeake Bay and its rivers, to the mountains and freshwater streams of western Maryland, our natural resources are unique and precious, providing abundant recreational opportunities and diverse ecological habitats and functions critical to sustaining clean air and water. The restoration, protection, and long-term sustainability of Maryland's natural resources is dependent on future generations of citizens who are environmentally literate and fundamentally connected as stewards to those natural resources.

Climate change, depletion of natural resources, air and water pollution, and other environmental challenges are pressing and complex issues that threaten the health and economic well-being of Maryland's communities. Finding wide-spread agreement about what specific steps we need to take to solve these problems is difficult and will require a fundamental understanding of ecological systems and the impacts of human activity on them. Environmental education will help ensure our nation's children have the knowledge and skills necessary to address these complex issues. Environmental science and related education, rooted in the kind of real-world immersion offered by environmental education is essential to preparing our children to succeed in a 21st century workplace. Their health and economic future—and that of the entire nation—depend on it.

Maryland's Plan to Connect Children in Nature

Recognizing the urgency in ensuring that Maryland's young people have the opportunity to connect with nature and grow to become informed and responsible stewards of our environment, Governor Martin O'Malley established, by Executive Order 01.01.2008.06, in April 2008 the Maryland Partnership for Children in Nature (Appendix A).

Co-chaired by Maryland Natural Resources Secretary John Griffin and State School Superintendent Dr. Nancy S. Grasmick, the Partnership merges, for the first time, Maryland State leadership in public land management and the formal education system to develop and implement a plan to provide youth with structured and unstructured opportunities for play, outdoor recreation, learning and scientific study and an environmental literacy plan.

This report contains the goals and strategies developed by the 21-member Partnership and 100 work group members to achieve the vision of Governor O'Malley's Executive Order as well as approaches for developing funding streams and public/private partnerships to implement those strategies.

4 **Pergams, Oliver,, Ph.D. and Patricia Zaradic, Ph.D.** "Kids picking TV over trees". June 2007.

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1.0 MARYLAND'S CHILDREN IN NATURE FRAMEWORK

The Partnership and work groups agreed early on that connecting children to nature and ensuring environmental literacy will best be accomplished through a comprehensive, multi-faceted approach involving both unstructured and structured experiences for children. Thus, in developing its recommendations and strategies, the Partnership sought to use virtually every existing social structure – from the family to the school – to increase the exposure of children to nature.

Recognizing the benefits of the inter-relationship between unstructured outdoor experiences and structured curriculum-based learning, the Partnership defines an environmental literate student as one that:

> ***possesses the knowledge, intellectual skills, attitudes, experiences and motivation to make and act upon responsible environmental decisions as individuals and as members of their community.***
>
> **Environmentally literate students understand environmental and physical processes and systems, including human systems. They are able to analyze global, social, cultural, political, physical, economic and environmental relationships, and weigh various sides of environmental issues to make responsible decisions as individuals and as members of their community and citizens of the world.**

Implementation of the recommendations, therefore, considers both the formal education and non-formal natural outdoor experiences of the whole child to achieve success in developing a citizenry that is schooled in environmental sciences, demonstrates a committed stewardship ethic, and maintains a connection with and enthusiasm for enjoying the natural world.

1.1 History of Children in Nature in Maryland

Maryland is often referred to as *America in Miniature*, a tribute to the State's diverse landscapes and natural resources. From the mountains of Western Maryland to the ocean beaches of the Eastern Shore, to America's largest estuary – the Chesapeake Bay -- the region offers a wealth of outdoor recreation opportunities that immerse people in nature. The abundance of the State's natural resources are highly accessible, enjoyed by more than 11 million Marylanders and visitors annually to 65 State Parks and more than 370,000 acres of public lands. These public lands staffed by park rangers and naturalists provide a multitude of opportunities for children to connect with nature, whether serving as the natural backdrop for a family vacation or the outdoor classroom for school.

The state has long been a leader in the field of environmental education, recognizing the value of meaningful watershed education experiences as integral to effective classroom instruction as well as long-term protection of natural resources. As the only state in the nation to require service learning for high school graduation, Maryland places a high priority on providing students with the knowledge, skills, and experiences to inspire lifelong stewardship and service to community. Not surprisingly, many students choose environmental action as a focus of service learning.

The long-standing success of the non-profit professional organization Maryland Association for Environmental and Outdoor Education (MAEOE) is yet another testament to the high priority teachers, community leaders, and others place on providing Maryland's youth with opportunities to connect with and learn about the natural world. Now in its 24th year, MAEOE's annual conference is the largest state environmental education conference in the country.

Yet, despite these widespread opportunities and resources, there was an undeniable recognition among state and local agencies, professional educators and nonprofit environmental and youth advocacy organizations that the connection between children and nature had declined. As a result, the Department of Natural Resources (DNR) formed an internal Children in Nature Matrix Team in 2007, which included a broad representation of employees from the Maryland Park Service, Office of Communications, Information Technology, Wildlife Service, Program Open Space and Environmental Education. The Matrix Team developed a comprehensive strategic plan (Appendix B), which would provide the initial inspiration and foundation of the Governor's Executive Order. The plan addressed five major areas of concern regarding the need for Maryland to reconnect children with nature:

1. **A lack of sufficient access for children to natural areas for play and unstructured physical activity.**
2. **The need to increase the frequency of contact between children in nature.**
3. **The need for more adult mentors and experiential education opportunities so that children will develop a love of nature and a stewardship ethic supported by knowledge.**
4. **A disproportionate lack of exposure to nature for at-risk youth populations.**
5. **A general lack of public awareness of the detrimental impacts of indoor, sedentary lives on childhood well-being.**

Nearly concurrent with the activities of the Department, a group of environmental education providers and advocates also raised the banner of children in nature, by launching the *No Child Left Inside Coalition*. The Coalition formed a broad network of Maryland individuals and organizations committed to environmental literacy and more time spent outdoors by children. The response from advocates was overwhelming. The National Coalition membership quickly grew to 1,112 organizations representing 47.5 million people from throughout Maryland and the world. A primary mission of the Coalition was the support of federal legislation introduced in 2008 and 2009 by Maryland Representative John Sarbanes and Rhode Island Senator Jack Reed titled the *No Child Left Inside Act* (H.R. 3036 and S. 1981) (Appendix C).

The No Child Left Inside Act will provide new federal funding for outdoor learning activities and high-quality environmental education to states that develop a certified Environmental Literacy Plan.

Upon Governor Martin O'Malley's issuance of the Executive Order to establish the Maryland Partnership for Children in Nature, the members of the Partnership had their first meeting in August 2008 at the Arlington Echo Outdoor School, Anne Arundel County Public Schools. The event attracted hundreds of environmental and youth advocates from around the State, who helped Governor O'Malley kick-off the Partnership in cooperation with Representative Sarbanes, DNR Secretary John R. Griffin and MSDE Superintendent Nancy L. Grasmick.

Over the past seven months, the Partnership held monthly meetings and numerous workgroup sessions to develop a Children in Nature Plan as charged by the Governor's Executive Order. Public input on the draft plan was solicited via the Internet and at an outreach forum at Arlington Echo Outdoor School in January 2009.

Maryland is not the first state to address the children in nature crisis; however, it has taken the bold action to task the state's public natural resource management agency (Maryland Department of Natural Resources) and the education agency (Maryland State Department of Education) to formally plan together, integrate and leverage their resources and efforts to lead to the common goal of fostering for children an awareness, understanding, and connection to nature through outdoor experiences with the hands-on benefits of experiential environmental education. It is the comprehensive nature of this approach that the Partnership believes is critical to the success of achieving the Governor's vision of a future Maryland loved and, therefore, effectively cared for by the next generation of stewards.

1.2 Goals of the Plan

The Executive Order to create the Partnership for Children in Nature provided detailed direction regarding specific goals and strategies to be addressed in the final plan. The following four over-arching goals were set forth, followed by a series of strategies that would provide the framework for the recommendations of the Children in Nature Plan:

1) **Develop and implement a plan to provide youth with structured and unstructured opportunities for play, outdoor recreation, learning and scientific study to include:**

   (a) Strategies that provide increased support for Schoolyard Habitat Programs, which support the conversion of schoolyards to natural habitats for play and outdoor classrooms;

   (b) Creation of trails to connect communities, parks and schools via trail systems that encourage walking, biking and increased time outdoors by youth and families;

   (c) Greening initiatives that create nature play areas within communities to provide outdoor experiences for children close to home;

   (d) A statewide Civic Justice Corps to provide at-risk youth with opportunities to serve in conservation crews in State Parks and other public lands in partnership with the Maryland Department of Juvenile Services and community non-profit organizations;

   (e) An outdoor classroom program that provides voluntary curriculum-aligned programming and service learning opportunities on public lands in cooperation with local county school systems, local parks and non-profit organizations;

   (f) Increased access to naturalists on State Parks and public lands to provide interpretive activities for children and families to enhance their discovery and enjoyment of Maryland's natural resources; and

   (g) Increased opportunities for under-served communities to access Maryland State Parks and public lands through partnerships with organizations that serve minority students;

2) **Develop and implement a State Environmental Literacy Plan to include:**

   (a) A review of current environmental education efforts in Maryland schools, including the environmental education bylaw, the Chesapeake 2000 commitments, and student environmental literacy levels;

   (b) Identification of curriculum necessary to develop environmentally literate students;

   (c) Identification of model outdoor field and service learning experiences that can be integrated into the regular school curriculum;

   (d) Professional development opportunities for in-service teachers, pre-service teachers, and non-formal environmental educators;

   (e) Methods to annually measure and report at the State and local level, progress of public school students toward becoming environmentally literate graduates; and

   (f) A process for revising or updating the environmental literacy plan every five years, or as needed;

3. **Identify opportunities and barriers to support implementation of programs in local school systems and on public lands.**

4. **Devise a method of measuring baseline data and increased time spent in nature by children.**

2.0 MARYLAND'S CHILDREN IN NATURE: TODAY

In an effort to better understand the quantity and types of programs, opportunities, and policies that are in place to support the connection of children to nature, the Partnership relied on several sources of data. First, the Community and Public Lands workgroup conducted a review of current efforts and prepared gap analyses in each of the key areas of the Governor's Executive Order. Second, the Environmental Literacy Working Group conducted a review of current environmental education efforts in Maryland schools. In addition, two surveys were administered during the plan development process. A Children in Nature Survey was developed and initiated by the Community and Public Lands Working Group and administered by the Chesapeake Bay Trust to establish baseline levels for many of the objectives contained in the Governor's Executive Order. A second survey was initiated and conducted by the Chesapeake Bay Trust to collect data on public support for outdoor learning relative to other pressing environmental issues. A Public Listening Session was held on January 13, 2009 at Arlington Echo to give the participants a chance to review and comment on the draft plan. Finally, the plan was posted on Maryland's Children in Nature website for public comment over a two week period.

2.1 Public Surveys and Input

2.1a Children in Nature Survey: Oct 24-Nov 5, 2008

Who took the survey?

An invitation to complete the survey was sent to over 3,500 individuals, including teachers, school administrators, non-profit organizations, community and government leaders, parents and children. The vast majority of invitations went directly to individuals who have received funding for environmental education and restoration projects from the Chesapeake Bay Trust but many others were forwarded to the larger education and environmental community in Maryland.

A total of 615 people responded to the invitations with significant representation from all categories referenced above and every Maryland county and Baltimore City.

What are they doing already?

- Approximately 40% of respondents reported use of their schoolyard to teach Math, Science, Reading, English/Language Arts, Social Studies and Fine Arts.
- 80% of the respondents reported they participate in non-schoolyard based "outdoor classroom experiences (field experiences off campus) and the vast majority of those experiences are for grades 3-6.
- 90% of those experiences are aligned with grade appropriate science standards.
- Walking/hiking, wildlife viewing, picnicking and bicycling are valued most by respondents when visiting a state park.
- 80% report use of trails (formal or non-formal) near their schools or communities to access open spaces, parks and other public natural areas.
- Nearly 75% of respondents report they are NOT evaluating the effectiveness of their environmental education programs.

What are the barriers to doing more?

Activity	# 1 barrier	#2 barrier	#3 barrier
Build and maintain schoolyard habitats	Maintenance issues	Inadequate funding	Time out of the classroom
Provide outdoor classroom experiences	Transportation	Time out of the classroom	Inadequate funding
Participate in professional development to assist with teaching outdoors	Time out of the classroom	Inadequate funding	After work time commitment
Provide nature play spaces in community or at school	Child safety concerns	Public awareness of need for "nature play"	Supervision
Participation in youth conservation corps programs	Inadequate funding	Lack of community awareness of programs	Transportation
Visit and use state parks/public lands for play and/or learning	Transportation	Entrance Fees	Distance from home

Barriers related to inadequate funding, time out of the classroom and curriculum restrictions dominated the barriers in every category of activities.

2.1b CBT Maryland Statewide Survey: November 20-30, 2008

Who took the survey?

Survey responses were collected from 1015 randomly selected adults Statewide. The final sample was weighted to accurately reflect the distribution of Maryland's adult population for key indicators including race/ethnicity, age and educational attainment.

Key findings

- 72% worry every day or sometimes about household financial situation.
- 49% rank protection of the environment above the middle of the pack of all the issues and challenges facing Maryland today.
- 97% rank making the Chesapeake Bay clean and healthy somewhat, very, or extremely important.
- 85% report preparation of children in schools for future environmental challenges is the most important environmental issue we face today.
- 86% report Maryland should invest more in training people for the green jobs of the future.
- 75% encourage kids to play outside.
- 56% garden.

2.1c Public Listening Session on the Draft Plan General, Common Themes

Over 85 people, representing non-profit organizations, government agencies (local, state, and federal), formal education, outdoor education, and higher education, attended the public listening session that was held at Arlington Echo Outdoor Education Center. The following represents ideas and recommendations generated at that session:

- Need a central, web-based location of all resources available to educators (field trips, funding, professional development, etc.)
- Liability is a concern for having kids on private lands and in natural play areas.
- Transportation of students to the facilities is a barrier of getting them outdoors.
- Funding is a barrier.
- Concern that teachers are being asked to do another task.
- Every Child Every Year is a great idea, but needs to be infused into the Voluntary State Curriculum.
- Diversity issues should be incorporated throughout all of the recommendations.
- Concern over how this will be tracked and measured.

2.2 Community and Public Lands Gap Analysis

The Children in Nature Partnership formed a series of Workgroups in order to involve subject experts in performing an analysis of opportunities, challenges and recommendations for each of the strategies outlined in the Executive Order as follows.

2.2a Family and Community Connections Assessment

Workgroup on connecting communities, parks, and schools via trails

- There is a need for a unified vision at all levels how a trail system can be designed to provide youth, families, and communities with greater access to and enjoyment of natural landscapes, outdoor exercise, and a sense of community connection. The lack of a unified vision results in missed opportunities to include trails in the planning and construction of new and renovated subdivisions, roads, parks, schools, and neighborhoods.
- There is a need for improved coordination among agencies with trail planning jurisdiction, including: local jurisdictions and their Planning and Recreation & Parks departments; State departments of Planning, Transportation, Natural Resources, and Business and Economic Development; non-governmental environmental, health, educational, and civic groups; and the public.

Workgroup on creating nature play areas

Overall, inadequate information exists about how many children have physical access to nearby nature, the number of adults who are unaware of the worth of nature play; the impediments to nature play, and best practices.

- Research has shown that adults can lack confidence to facilitate and/or allow nature play. They have fears both of nature and of trespassing.
- A conflict of values can exist between the environmental ethic of "take only pictures and leave only footprints" versus a child's need to physically explore and manipulate natural objects into tree forts and at-home aquariums.
- Risk aversion in contemporary society often dominates public safety policy yet children need challenge, even risk, to grow physically and mentally and become competent.
- Public versus private property laws can be an impediment to children using public common spaces in a community or development. For example, streams are public in many Maryland counties; however, that is not widely known, or the access to them is through private property.

Workgroup on Civic Justice Corps Programs

In a Children in Nature survey, respondents were asked the following question: "In general, what would you identify as barriers to participation in existing youth conservation corps/programs in your community? The survey collected responses from 409 participants who answered that barriers included:

- Lack of program funding (43.8%)
- Poor marketing, lack of community awareness (33%)
- Transportation (32.8%)
- Lack of staff resources (32.3%)

Workgroup on access to naturalists in state parks and on public lands

- Substandard levels of state park staffing is the most significant obstacle to providing increased access to state park rangers and naturalists.
- Inadequate staffing at state parks prevents many parks from dedicating one permanent ranger to interpretive activities.
- Funding for seasonal naturalists is inadequate.
- Inadequate staffing for law enforcement in state parks exacerbates "stranger danger" and other safety concerns that influence parents' comfort level in state parks.
- Transportation costs are the most significant obstacle preventing more visitation from school groups.
- Additional training is needed to further develop skills of ranger and naturalist staff.

2.2b Underserved Communities Assessment

The Workgroup on underserved communities involved subject experts in performing an analysis of opportunities, challenges and recommendations as follows.

- Financial resources for transportation, education, and staffing.
- There is a lack of awareness of program providers, teachers and parents regarding the full value and benefits of connecting to nature.
- There is growing competition for student time and attention. There are also challenges on family time, particularly for parents that must work multiple jobs and non-traditional hours to support their families.
- There is a perception that being in the environment is unsafe.
- Those that educate youth on the importance and value of nature must also be trained in how to work with and engage youth in natural settings.
- With emerging demographic changes, especially the growth of immigrant populations, it is becoming increasingly important to have staff that speak preferred languages of participants and understand their cultures.
- There is a need for relevant programming for the participant or user of the park, public space or outdoor educational facility.

2.3 School Day Assessment

2.3a The Environmental Literacy Workgroup reviewed current environmental education efforts in Maryland schools, including:

- COMAR 13A.04.17 Environmental Education Regulation
- Chesapeake Bay 2000 Agreement
- Course offerings
- Career Technology Education
- Student Service Learning
- State-Aided Institutions
- Student environmental literacy levels

Key Findings

- There is no required graduation requirement course in high school for environmental literacy; courses are currently available but they are *electives*.
- Schools have the discretionary authority to determine whether a Meaningful Outdoor Environmental Educational Experience (MOEEE) is offered at each grade level
- Pre-service and in-service professional development credits are currently available for environmental education, however, they are optional for teachers.
- The use of school buildings and grounds to make curricular connections with environmental education is performed by some schools; however it is not an institutional systematic practice.

2.3b Workgroup on schoolyard habitat

- Within the last 15 years there has been an increasing level of expertise, training and technical support available through the network of non-profits.

- The grassroots movement has gone as far as it can without greater institutional and government support.
- There is a lack of coordinated infrastructure support in local school systems.
- Excellent Schoolyard Habitats combined with effective professional development offer students the opportunity to explore, discover and learn holistically.
- In many localities, principals and administrators forbid any outdoor learning unless it is specifically required.
- Schoolyard habitats are not well understood or valued by school system personnel or parents for their educational potential and power inherent in connecting youth to nature.

3.0 RECOMMENDED GOALS AND ACTIONS

3.1 Key Themes

The Partnership developed recommendations that address the following three over-arching key themes:

1. **Connecting communities and families to nature**
2. **Reaching out to underserved communities that have the least access to nature**
3. **Strengthening students' connection to nature during the school day**

3.2 Recommended Actions

The Partnership identified the following three over-arching key themes and related recommendations as follows:

CONNECTING COMMUNITIES AND FAMILIES TO NATURE

Incorporate nature play spaces into community health planning, land use planning and community development design.

The opportunities for nature play are vanishing for many children all over the developed world, including Maryland, as open spaces are diminished or sequestered by development that does not account for this profound need. Nature play spaces have unique value to child development. Early childhood educators have long noted young children's affinity with nature. Creative imagining is universal to children and critical to their development. Nature, with its abundance of shapes, colors and textures provides the canvas and tools for children to transform stones to plates, acorn caps to fairy cups, and blossoms to jewels. Development theorists propose nature play in the middle years of childhood (age 6-12) is especially important in intellectual and emotional development. Children in the middle years are developmentally finding their way about the world and dreaming of being grown. Nature play with its abundance of huts and shelters, food supplies, and invented adventures, fosters this development. Further, engaging in play in the natural world is tied to caring for it as an adult -- a critical outcome for the long-term sustainability of our planet.

Key elements of this recommendation include holding a series of workshops and conducting a public relations campaign to elevate the importance of nature play spaces as an essential element of the community infrastructure.

To build and ensure access for children to nature play spaces, there is a need for increased awareness for leaders and the public through conferences, trainings and other public forums. An effort to protect and preserve, reclaim, and create new play spaces is also an important component of this initiative. The State's planning agencies need to establish that nature play spaces are a required element to all land use planning and community development.

Establish a Maryland Trail Development Office to: provied leadership and establish a vision for Maryland's trail system, including the coordination of multi-agency trail planning and funding, orchestration of trail advocacy, creation of a one-stop trail GIS database and website and the development of a new Maryland Trail Town Program.

Land and water trails provide a critical gateway for children and families to the natural world; a mechanism for improving physical fitness and psychological well-being. Unlike more formal

or structured outdoor environments, trail systems offer casual and unstructured opportunities for frequent contact with nature. A **Maryland Trail Development Office** is considered essential to igniting and establishing a more aggressive, better organized and higher profile trail program in Maryland. Key outcomes of this recommendation include: (1) a more cohesive trail planning program through a strategic plan and GIS database, (2) the development of a grassroots advocacy support network, (3) enhanced public awareness of trails and increased use by children and families, and (4) improved community involvement and quality of life through the creation of a new Maryland Trail Town program.

Develop a strategic state park and public lands Interpretive and Outdoor Classroom Plan, which includes the identification of funding needs to support a greater presence of park rangers and seasonal naturalist staff.

Maryland park rangers and seasonal naturalists serve the public as nature mentors, using the beauty of Maryland's state parks and public lands, in conjunction with specialized skills and expertise, to inspire a love of the outdoors in both adults and children. Ranger and naturalist staff resources also serve a critical role in facilitating and leading outdoor classroom activities in collaboration with local school systems and their environmental education curriculum. The development of a **Maryland Interpretive and Outdoor Classroom Plan** for state parks and other public lands is considered a critical first step in realigning existing programs, identifying new partnership opportunities and identifying gaps and staffing needs to deliver the best, system-wide interpretive and educational programs for youth.

REACHING OUT TO UNDERSERVED COMMUNITIES THAT HAVE LEAST ACCESS TO NATURE

Develop and implement a comprehensive program to increase access and utilization of public lands and waterways for underserved communities.

The many benefits that children derive from spending time learning and playing outdoors must not be limited to those communities with immediate access to vast green landscapes, public lands, or open water. The positive impacts on health, physical and emotional development, and academic achievement that come from unstructured nature play and structured environmental education opportunities are critical for all Maryland children, from rural communities to urban and suburban neighborhoods. The barriers to ensuring these rich experiences exist for all children include: lack of financial support and other resources, a lack of recognition of the value of such opportunities within the community, concerns about safety in outdoor environments, and the cultural competency of service providers in recognizing and overcoming these barriers.

While school-based programs are a critical component in connecting Maryland's children to nature and fostering environmental literacy, there are also many untapped opportunities to increase and empower community-based programs that connect children and youth in traditionally underserved areas with outdoor recreation and learning. By evaluating existing programs and identifying approaches and opportunities to increase participation of underserved communities, it will allow the utilization of diverse staff for outreach; creation of a work culture that is sensitive to ethnic diversity; development of family and community programs that reflect the community demographic; development of marketing materials and education programs that effectively reach underserved communities; identification and expansion of innovative partnerships, funding sources, mentoring and career opportunities for the underserved. By providing grant funds, mentoring for community leaders, and technical support to churches, neighborhood associations, community youth organizations, and others to engage local youth in outdoor and environmental education programs, the state facilitates experiences that become an integral part of the culture and experience of a particular group or community.

Expand and improve the existing Civic Justice Corps (CJC) model to serve 1,000 at-risk youth statewide by 2015 with summer conservation jobs and outdoor enrichment activities.

Established in 2008, under the leadership of Governor Martin O'Malley, the Civic Justice Corps was designed to promote the well-being of 14 – 17 year-old at-risk youth by engaging them in conservation service work in Maryland State Parks. The CJC program follows the tenets of a national program model, which has demonstrated success in using conservation service as a means to improve youth self-esteem and job readiness through a team-based conservation corps program. Using this service learning opportunity, CJC youth learn technical job skills and gain leadership abilities, self-confidence, and self-respect necessary for youth to effect positive change in their own lives and in their communities.

During the first program year, 200 youth from Baltimore City were employed, completing numerous conservation and park improvement projects in Patapsco and Gunpowder Falls State Parks. Program expansion efforts are underway in Harford and Prince George's Counties through the support of local partnerships. Future expansion to 1,000 youth by 2015will rely substantially on the existence of federal grant funding and the willingness and interest of allied agencies, nonprofit organizations and schools to form partnerships and leverage resources,.

STRENGTHENING STUDENTS' CONNECTION TO NATURE DURING THE SCHOOL DAY

Provide an annual meaningful outdoor environmental education experience for every student every year, pre-K through grade 12.

Meaningful outdoor environmental education programs are effective means for re-engaging large numbers of youth with nature in a systemic manner. Observable changes in students' behavior toward the environment are often evident with a single facilitated outdoor experience. Curriculum-aligned programs enhance student motivation for learning science and allow them to connect science, social studies and health concepts to real-world situations. In 1990, environmental education was mandated as part of the PreK-12 curriculum through the Code of Maryland (COMAR 13A.04.17). The Maryland Voluntary State Curriculum (VSC) incorporates environmental education concepts, standards, and objectives that are tied to national standards in environmental science, the sciences, health, and social studies. Environmental education is infused throughout the Voluntary State Curriculum in elementary and middle school and through the Core Learning

Goals in high school. However, due to the scale of the suggested changes in this document a review of the Maryland Environmental Education Regulation (Appendix D) for alignment confirmation should occur.

School systems work with many colleges, universities, local, state, and federal agencies, non-formal education organizations, and others to provide meaningful outdoor experiences for students. Eight school systems provide such experiences through their own Environmental and Outdoor Education Centers, while many others work with partners to provide outdoor environmental activities tailored to meet the curricular needs of the school system or provide opportunities on their school grounds and in their communities.

The existing framework for regular infusion of environmental education into PreK-12 curriculum can be strengthened with a requirement for a meaningful outdoor environmental education experience for every Maryland child but expanded so that experience occurs every year. This experience will be consistent with the guidelines developed by the Chesapeake Bay Program under the *Chesapeake 2000 Agreement* (Appendix E). The real-world immersion and hands-on application of curricular concepts provided by such experiences will enhance the achievement of environmental literacy for each Maryland student. Progress toward this goal should be included in each Local Education Agency's (LEA) Master Plan.

Require for graduation that every high school student take and pass a designated course of study on environmental literacy as defined in this document.

The course requirements for high school graduates make a strong statement about which skills and knowledge are valued to best prepare students to live and work as productive, responsible citizens. Including a requirement for one credit in environmental literacy is a critical addition to the PreK-12 curriculum and demonstrates Maryland's recognition that environmental literacy is necessary to prepare the next generation of citizens who will fill the green jobs of the future and rise to the mounting challenge of protecting our precious natural resources.

The State Department of Education should sponsor a committee of Assistant Superintendents from various LEAs to make a recommendation to the State Board of Education regarding this graduation requirement. Local Education Agencies may be able to identify opportunities to fulfill this recommendation within the existing course offerings. It will be necessary that designated courses include an issue investigation component, as environmental literacy is dependent not only upon content, but also upon skills and application of content. Progress toward this goal should be included in each LEA's Master Plan.

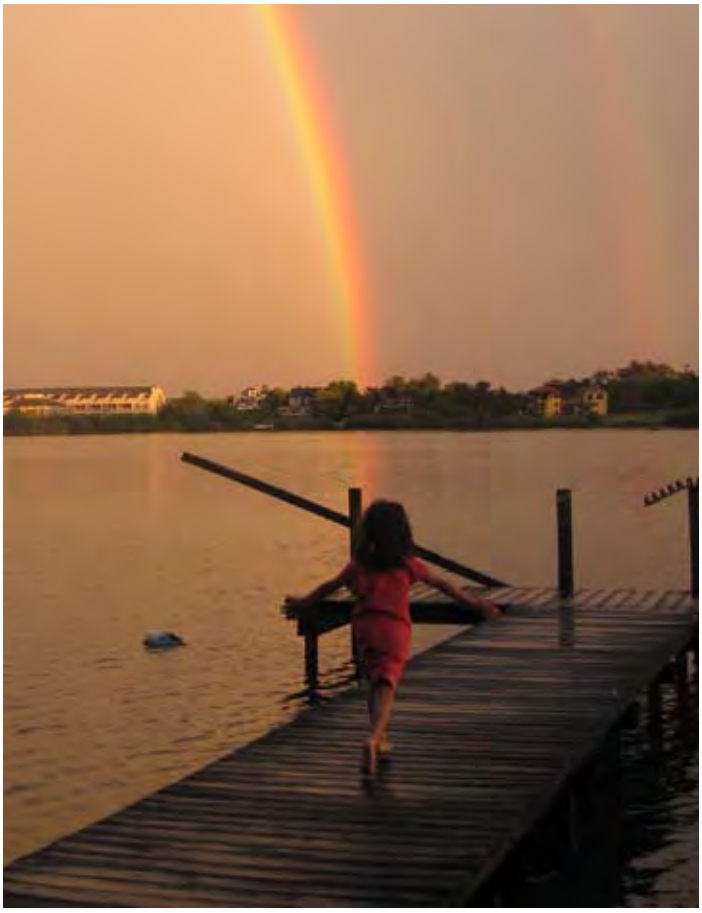
Establish a comprehensive initiative to green all schools and school grounds, and embed schoolyard habitat programs as integrated indoor and outdoor instructional components of the curriculum, to create opportunities for outdoor learning experiences for students and members of the community.

The Maryland Green School™ Award program, administered by the Maryland Association for Environmental and Outdoor Education, recognizes exemplary environmental education efforts that combine classroom studies with the use of best management practices at schools and involve the community. This acclaimed program provides a model for extended learning experiences, is aligned and infused across the Voluntary State Curriculum. Attaining Maryland Green School™ certification provides an engaging context for whole-school collaboration and demonstrates to students real-world applications for environmental content. Successful implementation of this goal will require increasing the capacity of such programs to provide technical assistance and administration.

Schoolyard habitats, already embraced by many teachers as an effective and exciting means to reach curricular and service learning goals, are a powerful component of the Maryland Green School™ Program. The next steps are to coordinate structural support to ensure schoolyard habitat programs are embraced as an integral component of school operations. Without that support, schoolyard habitats will remain a rarely implemented and lightly used resource. The green infrastructure of the schoolyard must be as integral to the operations of the school as the grey infrastructure of the school building. Progress toward this goal should be included in the 24 LEA's Master Plans so that by 2014 every school will have a maintained naturalized area on or adjacent to the school grounds to be used as a natural outdoor classroom.

Provide professional development for teachers, state park rangers and naturalists, and other service providers.

In order to achieve the goals outlined in this plan, both pre-service and in-service teachers in Maryland need to be prepared to teach their students about the environment, whether in the classroom, on the school grounds, or in the local environment.



Maryland's colleges and universities should require an environmental literacy course to include field methods for all teacher candidates and offer that course for teachers moving to Maryland from other states. While partnerships between schools and experienced environmental and outdoor education providers facilitate rich outdoor learning experiences, Maryland teachers must be prepared and inclined to connect those experiences to classroom learning goals. Professional development for teachers should follow Maryland's Teacher Professional Development Guidelines and reflect the reality that "teachers are at their best when they are engaged in high quality learning opportunities themselves." (Dr. Nancy S. Grasmick, State Superintendent of Schools) Progress toward this goal should be included in each LEA's Master Plan.

State park rangers, naturalists, and other environmental education service providers must also have regular opportunities for professional development in providing high quality programming for students and teachers. Service providers need to understand and act upon the curricular needs of school systems, age-appropriate educational activities, and effective pedagogy.

Adopt the Maryland State Environmental Literacy Standards

The draft Maryland Environmental Literacy Standards represent the knowledge and skills relating to the environment that students will have upon graduation from a Maryland school system. The standards are addressed through a variety of courses, service learning, and classroom and outdoor experiences from Grades PreK-12. Strands were developed to reflect the integrative nature of environmental education in both the natural and social sciences. The *Maryland Partnership forChildren in Nature* recommends that the Maryland State Board of Education formally adopt these standards.

The Maryland Environmental Literacy Standards are based on national standards, including:

- National Science Education Standards
- National Council of Social Studies Standards
- North American Association for Environmental Education
- Ocean Literacy Standards (draft)
- Education for Sustainability Standards (draft)

The standards can be used to enhance existing courses in the sciences, government, economics, health, or can be used as a template for the design of a new course. Backward mapping from these standards would be appropriate in producing the learning outcomes for Pre K- 8 students as illustrated in the national standards documents.

Issues-based investigation forms the cornerstone of the program, and is used as a teaching method that allows students to systematically study and evaluate complex environmental issues. The content of several indicators can be addressed simultaneously within the context of an issue of local, regional or global concern.

The final standard, *Sustainability*, forms the other major support to the framework. Natural processes are studied through the standards relating to the life and Earth/Space sciences. Human systems are investigated through differing geographic, cultural, societal, economic and political views. The interaction of these natural and human systems constitutes the majority of the study, with the concept of sustainability as the equilibrium point; the touchstone of positive human and natural interactions.

4.0 GOALS AND ACTIONS BY EXECUTIVE ORDER

The following Strategic Plan provides the Partnership's response to the Executive Order and identifies goals and actions for short-term and longer-term implementation. The Plan also outlines responsibilities of the lead agencies and provides suggestions on potential implementation and funding options for each short-term strategy.

This Strategic Plan is the work product of nearly eight months and 100 policy makers and advocates with diverse backgrounds in education, child development, environmental science and natural resources management and interpretation.

Specific to *either* formal classroom education *or* non-formal outdoor education experiences, the marriage of the two schools of thought is considered a keystone of the plan. The partners and the work group members believe that keeping a singular vision front and center – healthy Maryland children that grow into environmentally literate adults, enjoy and appreciate nature, and take responsibility for the health of the planet – is critical to the State's success in moving forward.

The plan is organized to specifically address the responsibilities of the Partnership outlined in Section K of the Executive Order: "***The Partnership shall promote the well-being of youth by providing opportunities for increased time spent outdoors and environmental literacy through outdoor experiential activities and formal and non-formal environmental education***." These responsibilities under Section K include four primary charges:

1. **Develop and implement a plan to provide youth with structured and unstructured opportunities for play outdoor recreation, learning and scientific study;**
2. **Development and implement a State Environmental Literacy Plan;**
3. **Devise a method for measuring baseline data and increased time spent in nature by children; and**
4. **Identify opportunities and barriers to support implementation of programs in local school systems and on the public lands.**

Executive Order 01.01.2008.06 – Section K: The Partnership shall promote the well-being of youth by providing opportunities for increased time spent outdoors and environmental literacy through outdoor experiential activities and formal and non-formal environmental education..

4.1 Community and Public Lands

DEVELOP AND IMPLEMENT A PLAN TO PROVIDE YOUTH WITH STRUCTURED AND UNSTRUCTURED OPPORTUNITIES FOR PLAY, OUTDOOR RECREATION, LEARNING AND SCIENTIFIC STUDY TO INCLUDE...

(1a) Strategies that provide increased support for Schoolyard Habitat Programs, which support the conversion of schoolyards to natural habitats for play and outdoor classrooms.

Strategy: Schoolyard Habitats

Work with building services and educators to connect outdoor learning in schoolyard habitats with existing curriculum and ensure the longevity of these projects. Schoolyard habitats should serve as a model for the community.

Recommendations to be Implemented:

- ***Provide an annual meaningful outdoor environmental education experience for every student every year, pre-K through grade 12.***
- ***Establish a comprehensive initiative to green all schools, both indoors and out of doors, and school grounds to create opportunities for outdoor learning experiences for students and members of the community.***

The outdoor classrooms of a school are as integral to learning as the indoor classrooms. The green and built infrastructures of a school, both indoors and out of doors, have equal impact on the success of our students.

Key Goals:

1. **Embed Schoolyard Habitat Programs within each school as an integrated instructional component of the curriculum.**

   A major task embedded in this goal is the need for every county and jurisdiction to actively train their teachers to effectively teach in the outdoors. Starting in 2010, each county school system will employ one full time Schoolyard Learning Coordinator. Counties with lower population densities such as Garret and Allegheny, Somerset and Worchester and Kent and Cecil counties will be able to share one coordinator between two counties. Coordinator responsibilities include: creating and implementing teacher training programs, including coordination with existing trainings offered by a network of environmental education providers in Maryland. By 2014, every school in Maryland will have a naturalized space on school grounds or directly adjacent to the school that is actively used as a space for outdoor learning. By 2014 every school in Maryland will have the tools necessary to optimize outdoor learning opportunities.

2. **Provide systemic support for creating and maintaining natural areas on school grounds to the 24 Local Education Associations (LEAs) by the building services branch of MSDE.**

   Each of the Maryland State School Systems will adopt MSDE's *Conserving and Enhancing the Natural Environment* guide as school system policy by 2012; and every school in Maryland will have a maintained naturalized area on or adjacent to the school grounds to be used as a naturalized outdoor classroom by 2014. Support for school systems and regions must be established to employ a crew to help maintain existing sites and establish new naturalized places for instruction. There is a demonstrable need to overhaul grounds-keeping rules and regulations to allow for students to be involved in the design, implementation, upkeep and maintenance of plantings and habitat features as appropriate.

3. **Ensure that schoolyards reflect the State's changing land ethic and commitment to improving the health of local waterways, to include the Chesapeake Bay; and to offer opportunities for providing open space, instilling community pride, connecting families with nature, and modeling public examples of what can be replicated on private land.**

   Schoolyard habitat planning must be a collaborative effort to ensure that design and citing is conducted within a watershed context that maximizes results in terms of wildlife corridors, canopy cover, carbon sequestration and storm-water control rather than individually isolated naturalized pockets. As a clearinghouse of local environmental action, MAEOE's website will be expanded and enhanced to provide opportunities for communities to connect with their schools, watershed organizations and the extensive network of environmental professionals. The school grounds will be considered a part of a community's ecological identity. Schools provide an opportunity for open space as well as opportunities to reduce the entire community's ecological foot print. By 2010 there will be at least 2 storm water neutral schools in each school systems and by 2012 at least 2 carbon neutral schools in each school system.

Short Term Actions:

Action	Lead	Support Options
Develop county or regional Schoolyard Habitat Learning Coordinators	MSDE working in partnership with others such as MAEOE	TBD
Mandatory 14 hour training for all School level maintenance personnel in the Maintenance for Natural Grounds. This will be a regular certification that all grounds keepers will have to keep and maintain to work on Maryland School grounds.	MSDE Facilities Branch with partners	Training developed using existing protocols and strategies of partners such as: MAEOE, the School Grounds Management Society, NRCS, NCTC and the University of Maryland Cooperative Extension.
Enhance MAEOE's existing website to serve as a resource for schools and communities	MAEOE	Grant options
The County based Schoolyard Learning Coordinator will act as a liaison between individual schools and the maintenance department, including working with individual schools to set up reasonable expectations of types, locations and maintenance of projects.	MSDE	TBD
A collaborative is created to work together to support the goals of the school initiative of *Conserving and Enhancing the Natural Environment* guide.	The Maryland Department of Planning, MSDE new school construction, State Smart Growth boards, county level growth plans, LEED for Schools, and county boards of education	MDE will have $750,000 annually available to be awarded in competitive grants to assist schools in creating their natural spaces that improve the school's storm-water and carbon footprint.
Expand and enhance MAEOE's Maryland Green School Program to include an online self -grading component for parents, schools and teachers. Expand and enhance the MAEOE Schoolyard Habitat program to include comprehensive on-line tracking of outstanding schoolyard habitat projects that exemplify best practices, and provide links and technical information to the resources that made the project work.	MAEOE	Grant options Grant options

Long-Range Vision:

Schoolyard habitat planning is envisioned to be a collaborative effort among teachers, students, school staff, community and local governments. Counties, school systems, and government agencies should be responsible and financially accountable for their storm water and carbon footprint. The ecological services of rain gardens, storm water wetlands, and other ecological areas offset these costs. A system will be in place to track and monitor the maintenance of these areas and reported accordingly.

(1b) Creation of trails to connect communities, parks and schools via trail systems that encourage walking, biking and increased time outdoors by youth and families.

Strategy: Trails

Create a Maryland Trail Development Office that would elevate attention to Maryland's trail system needs by establishing a vision and by leading and coordinating multi-agency trail planning, orchestrating trail advocacy, creating a one-stop trail GIS database and website and developing a new Maryland Trail Town Program.

Recommendation to be Implemented:

> **Establish a Maryland Trail Development Office to: establish leadership and a vision for Maryland's trail system needs, coordinate multi-agency trail planning and funding, orchestrate trail advocacy, create a one-stop trail GIS database and website and develop a new Maryland Trail Town Program**.

Overview:

Land and water trails provide a critical gateway for children and families to the natural world; a mechanism for improving physical fitness and psychological well-being. Unlike more formal or structured outdoor environments, trail systems offer casual and unstructured opportunities for frequent contact with nature. Trails traverse outdoor environments that have several qualities that are unique and appealing to children as play environments. Whether urban or rural, trails offer qualities of openness, diversity, manipulation, exploration, anonymity and wildness. The Partnership

focused on the need to elevate the attention to trail development and to accelerate community, regional and state trail planning efforts by centralizing leadership and coordination through the establishment of a statewide Trail Development Office.

On the water, Marylanders have the unique opportunity to use a variety of water craft to explore the shallow waters, marshes and beaches of the Chesapeake Bay. The recently designated Captain John Smith Chesapeake National Historic Trail provides a new venue for families to discover the Chesapeake and its tributaries by water, combining the routes of Smith's historic voyages in 1607-1609. The trail gives every Maryland family an opportunity to see the region's remarkable maritime history, unique watermen and their culture, diversity of people, historic settlements, and on-going efforts to restore and sustain the Chesapeake Bay. The water trail also gives Maryland teachers an opportunity to bring history to life and to excite an entire generation of young people about the many historical, ecological and recreational assets of the Chesapeake Bay.

Key Goals:

1. **Make development of a trail system *second to none* a priority for the State by providing visible leadership that strengthens trail planning and development at all levels of government and supports public awareness and advocacy**.

   In order to accelerate the development of trails and improve efficiency and access to resources, the workgroup recommended the creation of a Maryland Trail Development Office, which would centralize existing trail programs. The new office can be created by realigning existing resources, including $92,000 of existing National Recreation Trail grant administration funds.

   Currently, a multitude of trail grant programs support trail development, including National Recreation Trails, Transportation Enhancement, Chesapeake Bay Gateways and Scenic Byways; however, there could be strengthened coordination between agencies administering the funding. In addition, no single office is working to build public awareness and advocacy for trails and their related benefits to communities and children. The new Trail Development Office would provide a more cohesive vision for these trail programs and be responsible for leading implementation of the short and long-term actions listed below.

2. **Increase widespread support for and engagement in trail development and promote public awareness**.

   Unlike other States, such as Virginia and Pennsylvania, there is no Maryland-based advocacy coalition for trails. One of the responsibilities of the new Maryland Trail Development Office would be to support the organization of trail advocates and the formation of a non-profit advocacy organization to infuse trail programs with private resources. Trail advocacy organizations would provide a network of support to raise public awareness about trail resources throughout the State and advocate for federal grant funding for trail development.

   In order to raise public awareness and use of trails, the Maryland Trail Development Office would also market the State's existing trail publications, from the Scenic Byways map to topographic trail maps for State Forests and Parks. The suite of trail maps and guides would continuously be enhances in collaboration with local tourism agencies to encourage visitation of trails and related economic development.

3. **Integrate trails into planning at all levels of government**.

   Trail planning occurs at all levels of government, from the trail system connecting points of interest in a town to a regional greenway trail that cuts across county and even state jurisdictions. The new Maryland Trail Development Office would ensure that these individual planning efforts are coordinated to ensure appropriate connections and to address gaps in the State's trail system. The current GIS database of Maryland's trail network would be updated to include all trails and capture a greater level of detailed data regarding existing trails and future trail plans. This database would serve as a critical planning tool for all levels of government.

4. **Increase trail funding and streamline access to trail design, building and maintenance funds**.

   Trail development is financed through a complex web of mostly federal grant resources. These resources are under threat of elimination on nearly a yearly basis due to federal reauthorization requirements. The new Maryland Trail Development Office would provide technical support for trail advocates and communities to access trail grant resources, track grant applications, design a website trail grant toolbox and report on advocacy needs to support federal trail grant funding.

Short Term Actions:

Many of the strategies necessary to increase access to and development of trails can be implemented in the next two calendar years, with a combination of existing state funding and alternative funding sources, including:

Action	Lead	Support Options
Create a Maryland State Trail Development Office (Trail Ombudsman)	DNR & MDOT	Re-program existing federal administrative grant funds; reorganize state staff resources
Create a one-stop trail website of information for trail grants,	DNR & MDOT	Existing resources; federal NRT grant
Convene a Maryland Trail Summit to develop advocacy	DNR & MDOT	Private sponsorships, federal RTCA grant funds and registration fees
Create a Maryland Trail Town Program as a means to stimulate trail development & economic development	DNR, MDOT, DHCD, DBED	To be determined; work with Pennsylvania Trail Town NGO, which is already funding Trail Town planner for Cumberland MD
Develop a more comprehensive and detailed GIS database resource of all MD trails	DNR, MDOT, MDP	Improve current GIS database with existing resources
Expand publication of trail map series	DNR & MDOT	Federal trail grant funds; tourism partnership grants; private sponsorships
Provide trail grants through Safe Routes to Schools program to connect schools with parks	MDOT, MDP	Existing federal transportation grant resources

Long-Range Vision:

A Maryland Trail Development Office is essential to igniting and establishing a more aggressive, better organized and higher profile trail program in Maryland. A long-range vision will need the support of a dynamic strategic plan that is coordinated with state and regional governments, and supported by a grassroots network of trail advocates and funded with federal grant programs.

A keystone element of the long-range strategic plan will be the development of a **Maryland Trail Town** program. Modeled after a successful program in Pennsylvania, the Trail Town program embeds trail town planners within communities to organize citizen support and involvement in connecting and revitalizing their communities with trails. These efforts provide the grassroots energy and vision to plan and develop trails at the local level and capitalize on their value to community quality of life.

(1c) Greening initiatives that create nature play areas within communities to provide outdoor experiences for children close to home

Strategy: Nature Play Areas

Through a series of collaborative workshops and a public relations campaign, elevate the status of nature play spaces as a key element to land use planning and community development, parallel to infrastructure elements such as transportation, schools, and amenities.

Recommendation to be Implemented:

> **Incorporate nature play spaces into community health planning, land use planning and community development design**

Overview:

Children need outdoor places to play in order to provide a foundation for developing a connection with nature. "Natural playgrounds" are play environments that blend natural materials, features, and indigenous vegetation with creative landforms. Objects from nature challenge and fascinate children and teach them about the wonders and intricacies of the natural world while they play. Natural play spaces allow children to be active and creative; they are specially designed for children of all ages and abilities and for boys and girls alike. They promote light, moderate or vigorous physical activity that supports children's growth and development.

Key Goals:

1. **Increase awareness of what nature play spaces are and how essential they are to the health and well-being of children.**

   Little is known, either with the general public or people in the landscape design/community design profession about nature play spaces. It is imperative to begin to engage all stakeholders (government agencies, community organizations, boards of education, parent organizations, schools of education, environmental groups, developers, landscape architects and designers, and foundations) in partnerships and collaborations. State, regional, and local conferences will allow the sharing of information at other conferences such as American Society of Landscape Architects (ASLA), botanical gardens association, master gardeners. There is a need to consult nationwide with other nature-children projects, e.g. the Chicago Wilderness Vision and others funded by the National Forum on Children and Nature. It is important to engage and work with teacher education programs to gain curriculum inclusion of nature play as a significant developmental task, along with reading, math, etc. and also to engage and work with the child care community to gain support for change in regulations to require nature play outdoors.

2. **Protect, preserve, reclaim existing and create new nature play spaces, including underutilized spaces.**

   Since this is an emerging field, the potential for workforce opportunities in this task needs to be identified through working with those in the profession to create training programs for jobs. This will be done through creating partnerships of stakeholders (see above) and working with all agencies that have a role in capital projects (e.g., parks, schools, transportation, housing) to identify spaces and assess development tasks (cleaning, planting, constructing, etc.). For example, a community could make wetlands accessible with paths, consider creating little beaches on small creeks for play. A useful tool to include in this process would be using Governor O'Malley's new GreenPrint program for creating nature play spaces as well as existing funding programs such as Program Open Space.

3. **Ensure access to natural play spaces.**

   There are some Maryland residents who currently do not have access to natural play areas. Existing barriers and potential strategies, including regulatory and non-regulatory approaches, and funding guidelines need to be identified. This would be done by hiring a consultant with legal training to research and report on barriers. This person could also plan legislative and regulatory remedial actions on barriers.

4. **Establish expectation that nature play spaces are an element of land use planning and community development, parallel to typical infrastructure elements such as transportation, schools, and amenities.**

   By working with Maryland Department of Planning we can develop standards and guidelines can be developed in concert with state and local planning agencies. Also, there is a need to work with zoning boards, major developers, MDP, MSDE Planning and Facilities, landscape and building architects at universities and colleges. These partnerships will allow the development of a research, design and training institute similar to Natural Learning Initiatives at NCSU (North Carolina State University).

Short Term Actions:

Action	Lead	Support Options
The Partnership for Children and Nature will hold a statewide conference to launch the awareness initiative.	DNR/MSDE	NGOs Landscape architecture design firms and university programs
Work with Landscape Design programs within universities to develop model natural play spaces across the State.	DNR/MSDE CPL Greening Initiatives subcommittee	Maryland Universities' Landscape Design Progams
Develop a publicity plan to support the concept of natural play areas, including informational brochures and DVDs, and webpages for State website. Develop a calendar of state and local conferences and arrange for presentations.	DNR Communications UMBC/University of Maryland	Existing resources available
TRAINING – Identify training programs working with DLLR (Department of Labor, Licensing, and Regulation) and DBED (Department of Business and Economic Development) to set up partnerships and conduct training. Connect with the agriculture technology programs in public high schools to utilize training in horticulture. Train play workers, and connect with high schools and child development programs.	DNR with DLLR/DBED	TBD
Hire landscape architect to lead design charettes in all regions of the state. Publicize the designs. Form local partnerships to implement the designs. Redefine school grounds more expansively to include nature play spaces.	Work with DNR and Forestry community to develop ideas of as sources of play materials (tables, stools, climbers, pathpieces, huts, etc.) MSDE	Seek partnerships of funding from CBT, TKF, Annie B. Casey, etc. The Robert Wood Johnson Foundation -Healthy Kids, Healthy Communities The Public School Construction Program (PSCP) which includes the Aging School Program (ASP) funds new construction, renovation, and refurbishment of school grounds and Buildings. .

Long-Range Vision:

The concept of natural play spaces as a regular part of landscape design conferences is a major element of the long range vision. The state's planning efforts have established that nature play spaces are a required element to all land use planning and community development. Citizens will understand and embrace the importance of natural play spaces to the health and development of children. Training programs are available through adult education activities that emphasize the importance of natural play areas.

(1d) A statewide Civic Justice Corps to provide at-risk youth with opportunities to serve in conservation crews in State Parks and other public lands in partnership with the Maryland Department of Juvenile Services and community non-profit organizations.

Strategy: Civic Justice Corps

Build the capacity and sustainability of the Maryland State Park Civic Justice Corps (CJC) program by identifying alternative funding resources and entering into partnerships with aligned state and local agencies, as well as, non-profit community organizations. The long-term vision entails the development of youth camps in State Parks to serve as hubs of outdoor activity and resource conservation projects for organized youth groups, including CJC programs.

Recommendation to be Implemented:

- **Expand and improve the existing Civic Justice Corps (CJC) model to serve 1,000 at-risk youth statewide by 2015 with summer conservation jobs and outdoor enrichment activities.**
- **Develop and implement a comprehensive program to increase access and utilization of public lands and waterways for underserved communities.**

Overview:

The Maryland Civic Justice Corps (CJC), established in 2008 under the leadership of Governor O'Malley was designed to promote the well-being of 14 – 17 year-old disadvantaged or "at-risk" youth by engaging them in summer conservation jobs in Maryland State Parks and other public lands. Conservation service not only fulfills a need for closer connections to nature, it also provides development and enrichment activities that help youth achieve their full potential.

By working in conservation crews, CJC youth learn technical job skills and gain leadership abilities, self-confidence and self-respect necessary for youth to effect positive change in their own lives and in their communities. The current program provides 200 youth from Baltimore City with summer jobs in Patapsco and Gunpowder Valley State Parks. The Department of Natural Resources is currently working on a plan to enlist local partnerships in an effort to expand the program to reach a target capacity of 1,000 youth by 2015.

Key Goals

1. **Build capacity and develop the sustainability of Maryland's existing Civic Justice Corps model for statewide application.**

   This action will strengthen the CJC program as it was originally implemented in 2008, a direct service model which relies primarily on state park-based conservation service and utilizes Maryland Park Service (MPS) staff for support and technical expertise. This model is highly effective, but has limitations based on MPS staff resources. 200 youth were served by this model in 2008. Utilizing existing MPS staff resources and local partnership funding, this model can be expanded to serve up to 300 CJC youth statewide. Efforts are underway to expand the program to Harford and Prince George's County in FY 2010 for 32 youth. The MPS is also dedicating existing resources to hire a new CJC coordinator in FY 2009 to support program expansion and sustainability.

2. **Develop and implement new CJC model programs with Partner Providers to increase capacity of CJC program by a minimum of 1,000 youth by 2015.**

   In order to reach the goal of 1,000 youth, the MPS will complement the existing direct service model by entering into agreements with community partners so that they may serve as Partner Providers of CJC programs. In addition to providing service projects and staffing resources, Partner Providers will also be asked to assist in fundraising that will support the CJC program in their community. A key future Partner Provider Program will be the establishment of after-school programs that retain the CJC program connection with youth year-round.

3. **Improve sustainability of CJC program by developing alternative funding sources to supplement state budget.**

   The CJC program has the potential to garner financial support from a number of alternative funding sources, and indeed has already been successful in this effort in its first year of existence. By using existing state funding as matching dollars, CJC can tap into numerous government and non-profit grant opportunities, as well as private donations and corporate sponsorships, expanding the program without expanding the need for additional state funding.

Short-term Action

Many of the strategies necessary to create a statewide Civic Justice Corps can be implemented in the next two calendar years, with a combination of existing state funding and alternative funding sources, including:

Action	Lead	Support Options
Expand use of Maryland Conservation Corps (MCC) as support staff/ mentors for CJC youth.	DNR	Existing resources available
Hire a CJC Coordinator	DNR	Existing resources employed in FY 09
Develop a longitudinal youth tracking process to measure academic performance, recidivism rates, and employment success following completion of the program.	DNR	Existing resources available
Identify and pursue grant and sponsorship opportunities.	DNR	Existing resources available
Establish a "Friends of the CJC" organization to serve as advocates and fundraisers on behalf of the CJC.	DNR	Existing resources available
Implement After-School Programs for CJC corps members (CJC Leadership Academy and Teen Rangers)	DNR	Partnerships with non-profit agencies, grant resources necessary
Provide job-readiness training to CJC youth, in partnership with DJS and Parks and People Foundation.	DNR & DJS	Existing resources available
Increase capacity of program by 32 – 40 youth, in Harford and Prince George's Counties in FY2010.	DNR	Underway with existing resources

Long-Range Vision

The Maryland Civic Justice Corps model has tremendous growth potential, both in terms of expanding the number of youth served, and enhancing the quality of each youth's experience, and therefore the outcomes of the program for the community. The long-range vision for the program is to continue to grow the program, bringing it to scale with the tremendous need that is evident in so many Maryland communities. In order to reach successfully beyond our immediate goal of 1,000 youth, the issues of adequate infrastructure and staff to support the program will become key challenges.

Infrastructure to support the program may include the establishment of four to five "Children in Nature" (CiN) base camps in Maryland State Parks, which would serve as hubs of outdoor activity and conservation service for youth. CiN base camps would also support the physical needs of a growing program by providing centers for professional development to build capacity and enhance adult mentoring skills in the outdoors. They would provide work space for the additional rangers, naturalists and other staff necessary to execute the program. Each base camp would function as a kind of clearinghouse; a place where the diverse community of resource professionals, parents, educators, community partners and the youth themselves could come together in pursuit of the common goal of reconnecting children with the natural world.

(1e) An outdoor classroom program that provides voluntary curriculum-aligned programming and service learning opportunities on public lands in cooperation with local county school systems, local parks, and non-profit organizations.

Strategy: Outdoor Classrooms

Ensure that 100% of all Maryland students annually participate in effective outdoor education/service learning programs. Provide, support, and enhance curriculum-aligned outdoor classroom and service learning opportunities on public lands and waterways through the reduction of major barriers to these programs and increasing the capacity of state, local, and national parks. Establish evaluation of all programs in order to assess the benefits of outdoor education and service learning and to implement ongoing program improvement.

Recommendations to be Implemented:

- **Provide an annual meaningful outdoor environmental education experience for every student every year, pre-K through grade 12.**
- **Establish a comprehensive initiative to green all schools and school grounds to create opportunities for outdoor learning experiences for students and members of the community.**

Overview:

Outdoor curriculum-aligned education programs and service learning are effective means of re-engaging large numbers of youth with nature in a systematic manner. In the past, parents took their children to parks; now, children who have engaged in place-based outdoor programs bring their parents back to the parks. Overwhelming numbers of students enjoy these outdoor experiences and develop positive, lasting connections as a result. Observable changes in students' behaviors toward the environment are often evident with a single facilitated outdoor experience. These programs engage students who have a wide variety of learning styles, often engaging students who do not respond well in the traditional classroom setting. Curriculum-aligned programs enhance student motivation for learning science and allow them to connect science, Social Studies, and health concepts to real-world situations.

Key Goals:

1. **Eliminate/reduce the identified major barriers to curriculum-aligned and service learning outdoor program participation.**

   Since part of the barrier is that some teachers don't know what options are available to them, this goal aims to increase the percentage of teachers who can identify at least 5 outdoor environmental education or service learning programs in their county/region. Teachers should also be able to identify and increase funding for transportation, substitute teachers, program fees and materials so that every public school student in Maryland has the opportunity to participate in one outdoor education experience per year. There is a need to increase the percentage of teachers per school that participate in outdoor or environmental education professional development/trainings and are able to integrate field methods courses into Maryland Pre-service teacher training for science teachers. Adding a field methods in-service training requirement for science (and possibly social studies and other) teachers would allow teachers to feel more comfortable taking their students outside for learning opportunities.

2. **Increase capacity of state, local & national parks to provide high quality, rigorous, meaningful, curriculum-aligned and service learning outdoor experiences.**

   This goal aims to ensure that every site has a minimum of one professional outdoor educator by 2010 and offers at least 8 professional development opportunities for teachers, park staff and/or volunteers per year (2 per region) at state/local parks, with MSDE credit. Funding should be made available for teachers and non-formal education professionals to earn an Environmental Educator Certification through Maryland Association for Environmental and Outdoor Education (MAEOE) and/or National Association of Interpretation certification for naturalist/environmental educator positions. Each site or park will develop a service learning plan, updated yearly, to include: Project list; Targeted populations (grade levels, schools, individual/group projects, etc.; and a Marketing plan.

3. **Ensure that all Maryland students have curriculum-aligned Meaningful Outdoor Experience (MOE) at least once per year.**

   It is important that 100% of Maryland students participate in effective outdoor education/service learning programs every year (these can be onsite at the school). However, there will be a need to provide outdoor education training and support tools for 100% of elementary, middle, biology and environmental science teachers every 3 years. Some areas of the state are grossly underserved in having facilities available to them, which is why we need to increase number of providers/outdoor education centers in low-service counties

   One major barrier to MOEs is that, all too often, teachers are not permitted to take classes off-site. This is due to lack of understanding of the value of these experiences and it is important to facilitate classroom teacher ability to obtain permission for MWEE's by reaching out to the Board of Education and ensuring that all local Boards of Education adopt MOE language to require an outdoor education experience once per year, and establish as integral part of the curriculum. This may be done through an outreach specialist to work with each local Board of Education to facilitate process of field studies.

   Lastly, there is a need to provide outdoor education professional development for Maryland school administrators (one per building) every 5 years.

4. **Implement an evaluation program to quantify and provide demonstrable, cohesive data in order to assess the benefits of outdoor education and implement ongoing program improvement.**

   All participating programs should implement an evaluation process to assess outputs and outcomes on an annual basis. Program providers should be trained in evaluation tool administration, data collection and use of data. All participating programs should enter their program data into an online centralized database annually. This will allow to the creation of a summative report every three years, with distribution to the Governor, District Superintendents, School Administrators and Park Administrators, with an online version available for all.

Short Term Actions:

Action	Lead	Support Options
Develop a well organized, comprehensive and searchable catalog of outdoor classrooms, outdoor/environmental education professional development opportunities, and service learning programs. Market the tool to local schools and train teachers in the use of the tool.	MSDE/LEAs/ MAEOE	Existing resources available
Create new funding sources to support transportation, substitute, and programmatic costs.	CBT collaborate in planning with other Maryland Funders NGOs	
Increase NOAA BWET funding to support: • professional development for teachers & administrators, and • student MWEE's	Chesapeake Bay Program/NOAA CBT	
Identify outdoor education/service learning curriculum alignment options (multidisciplinary) **for providers** at every grade level for the Maryland Voluntary State Curriculum (and/or individual county curricula).		
Develop and provide professional development for teachers and administrators.	MSDE/MAEOE/ DNR	
Increase number of providers/outdoor ed centers in low-service counties (Allegany and Dorchester have expressed need and desire for Outdoor EE facilities).	MSDE with support of local BOE	Utilize existing outdoor facilities but additional support for staff: will be needed
Add a field methods in-service training requirement for science (and possibly social studies and other) teachers.	LEAs, School Districts	
Integrate field methods courses into Maryland Pre-service teacher training for science teachers.	MSDE University of Maryland/Towson University/other institutions	
Raise dedicated funding for evaluation.	NOAA, EPA, NSF	
Design an evaluation plan and suite of usable tools, available to all participating programs. Create a database for centralization of program data. Train providers in evaluation tool admin., data collection and use of database.	University of Maryland/MSDE/ Evaluation Consultant/Outside Evaluator	

Long-Range Vision:

Barriers such as funding for transportation, substitute teachers and program fees have been eliminated. High quality and rigorous professional development opportunities are offered for administrators, teachers, park staff and/or volunteers. Every student in Maryland has a curriculum aligned Meaningful Outdoor Experience at least once per year. All evaluation/reporting mechanisms (Master Plan, Master Plan annual updates, Chesapeake 2000 Agreement, and Environmental Education Regulation) are coordinated.

(1f) Increased access to naturalists on State Parks and public lands to provide

Interpretive activities for children and families to enhance their discovery and enjoyment of Maryland's natural resources.

Strategy: Increased access to naturalists on State Parks and public lands

In order to increase access to park rangers and naturalists, five key actions have been identified as follows: (1) maximizing the impacts of existing resources through program assessment and

revision, (2) building partnerships with non-governmental community groups, school systems and other government agencies, (3) improving park infrastructure to facilitate physical access, (4) providing sufficient numbers of park rangers and seasonal naturalists and (5) ensuring a park law enforcement presence to create an environment where families will feel safe.

Recommendations to be Implemented:

- **Develop a strategic state park and public lands Interpretive and Outdoor Classroom Plan, which includes the identification of funding needs to support a greater presence of park rangers and seasonal naturalist staff.**
- **Provide an annual meaningful outdoor environmental education experience for every student every year, pre-K through grade 12.**
- **Develop and implement a comprehensive program to increase access and utilization of public lands and waterways for underserved communities.**

Overview:

Maryland park rangers and naturalists serve the public as nature mentors, using the beauty of Maryland's state parks and public lands, in conjunction with specialized skills and expertise, to inspire a love of the outdoors in both adults and children. Natural places can sometimes be intimidating to parents or children who are not familiar with the outdoors. Such fear or uncertainty can be a powerful barrier that keeps children from enjoying the full benefit of Maryland's open spaces.

This is why the intermediary role played by rangers and naturalists is so important in connecting children to the natural world. They help parents and children alike to feel safe while recreating in the outdoors, and offer fun and engaging ways for families to interact with the resource in a way that broadens understanding of the natural world and fosters a passion for conservation. Rangers and naturalists help families experience the joy of discovery.

Park Rangers and naturalists can also provide a pivotal service for schools by providing outdoor classroom programs aligned with a school-based curriculum. Rangers and naturalists can work with teachers to effectively deliver environmental education lessons, while facilitating an experiential outdoor experience. The combination of these roles enhances the students' comprehension and appreciation for the curriculum.

Key Goals

1. **Provide adequate professional ranger and seasonal naturalist staff and volunteers to serve as nature mentors and conduct interpretive programming at all State Parks and other public lands.**

   Staffing levels in Maryland State Parks is at an historic low, with a ratio of one staff person per 55,000 visitors. The ability to mentor more children depends in large part on having more staff on site to interact with youth. Full-time ranger positions are key to the success of any park staffing structure, as they provide a foundation of professional expertise, site knowledge, continuity and supervision to an interpretive workforce that may be comprised largely of seasonal naturalists and volunteers. When ranger positions are lost at a park, volunteer hours and seasonal hiring drop as well, resulting in a subsequent decline in interpretive services.

   Ideally, State Parks would have the number of rangers necessary to support a team of seasonal naturalists and volunteers at every State Park; however, that vision may be fiscally unattainable in the immediate future. In the interim, existing resources should be carefully allocated to ensure that seasonal staffing budgets support a vital, strategically placed interpretive team that maximizes services to youth and families. Priorities should also be aligned to promote staff collaboration and resource sharing between local, regional, state and national park agencies, schools and other nonprofit community organizations.

2. **Enhance existing programs to successfully connect children and families with state park resources.**

   This action item is one that can be executed immediately with existing resources. It calls for a thorough assessment (and revision where necessary) of the existing menu of interpretive programs offered in State Parks and other public lands. A statewide **Maryland Park Service Interpretive and Outdoor Classroom Plan** should be prepared that considers audience diversity, program content, marketing strategies, material and web-based program support, geographic distribution of services (to ensure the maximum number of communities are equitably served), professional development needs, school curriculum needs and other support for a classified, seasonal and volunteer workforce to ensure the most effective and efficient deployment of all existing resources.

3. **Provide greater coordination for children and families to experience a seamless network of opportunities in local, county, state and national parks.**

   This action item can be executed immediately with existing resources. Many examples of positive partnerships exist throughout the State between neighboring park agencies at all levels of government. Such partnerships encourage efficiency through resource and information sharing and positively influence the public's experience in the outdoors. This action item calls for expanding on these successes, exploring new partnerships and formalizing relationships where appropriate to facilitate long-range planning, fundraising and program development.

4. **Ensure adequate recreation infrastructure in state parks to support diverse interpretive programming to serve more visitors.**

   The deterioration of State Park infrastructure in particular continues to challenge every aspect of park operations, as land managers struggle to keep parks functioning despite a significant critical maintenance backlog of $36 million. When parking lots, security lighting, restrooms, canoe and boat launches, trails, playgrounds and nature centers fall into disrepair, this hinders the ability of the public to gain access to their public lands and diminishes the quality of their experience.

A comprehensive approach to tackling critical maintenance needs is necessary, but funding does not currently exist. Some efforts are underway with existing resources, to utilize Civic Justice Corps and Maryland Conservation Corps youth, as well as, Corrections inmates and community service workers to maximize existing limited funding resources to restore facilities and natural areas. These resources could also be used to build nature play spaces within state parks.

5. **Provide sufficient Natural Resource Police presence in State Parks to create an environment where parents, teachers and children will feel safe participating in nature-based outdoor activities.**

   Park law enforcement is a specialized kind of community enforcement that relies on officers being able to engage in positive, hospitality-based interactions with the visiting public, monitor and respond to activity on large tracts of sometimes inaccessible park property and respond to serious enforcement incidents. In order to ensure that visitors, especially teacher and parents with children, feel safe, it is essential that state parks and other public lands have the constant presence of a well-supported Natural Resources Police agency.

Short-term Action

Many of the strategies necessary to increase access to park rangers and naturalists can be implemented in the next two calendar years, with a combination of existing state funding and alternative funding sources, including:

Action	Lead	Support Options
Development of an MPS Interpretive and Outdoor Classroom Plan, which includes an assessment and update of existing interpretive programs.	DNR	Existing resources available
Identify and pursue grant and sponsorship opportunities.	DNR	Existing resources available
Develop web content to support and promote outdoor activities and outdoor classrooms.	DNR	Existing resources available
Partner with local school systems to maximize the potential of state parks to serve as outdoor classrooms for curriculum-aligned activities.	DNR	Existing resources available in certain State Parks; additional funding needed to reach full capacity
Establish Signature Parks as regional hubs for staff collaboration and professional development	DNR	Existing resources available
Partner with Master Naturalist program through Cooperative Extension Service to increase cadre of volunteer naturalists.	DNR	Existing resources available
Identify sites and begin planning for construction of nature play spaces.	DNR	Grant funding or private sponsorship required; U of MD landscape architecture students developing concept plans

Long-Range Vision

Clearly, there is much that can be done today to enhance interpretive efforts in Maryland State Parks and other public lands; however, to ensure sustainability of these efforts and maintain professional standards of service, the staffing shortage and infrastructure challenges must be addressed at some point. Failure to do so will ultimately result in the disruption, decline or cessation of services. These basic building blocks – having a place to come to and people to care for the people and the places – are the foundation of every effort that takes place in state parks and public lands in service to the citizens of Maryland. Despite current economic conditions that preclude such improvements, we should not lose sight that these remain the most essential needs for a healthy and vibrant Maryland State Park and public land system.

(1g) Increased opportunities for underserved communities to access Maryland State

Parks and public lands through partnerships with organizations that serve minority students.

Strategy:

Enhance existing youth outreach programs that have demonstrable successes by providing them with additional training and funding. These programs should include a mentor component that connects youth to communities and careers.

Recommendations to be Implemented:

- **Develop and implement a comprehensive program to increase access and utilization of public lands and waterways for underserved communities.**
- **Expand and improve the existing Civic Justice Corps (CJC) model to 1,000 at-risk youth youths statewide by 2015, with summer conservation jobs and outdoor recreation**

Overview:

The many benefits that children derive from spending time learning and playing outdoors must not be limited to those communities with immediate access to vast green landscapes, public lands, or open water. The positive impacts on health, physical and emotional development, and academic achievement that come from unstructured nature play and structured environmental education opportunities are critical for all Maryland children, from

rural communities to urban and suburban neighborhoods. The barriers to ensuring these rich experiences exist for all children include: lack of financial and other resources, a lack of recognition of the value of such opportunities within the community, concerns about safety in outdoor environments, and the cultural competency of service providers in recognizing and overcoming these barriers.

Key Goals:

1. **Evaluate existing community participation programs and identify approaches and opportunities to assure inclusion of underserved communities.**

   In order to achieve this goal, we must utilize a diverse staff to conduct outreach to underserved communities in addition to staffing with state parks and public lands and strive to create a working environment that included and respects geographic, cultural, racial, and ethnic diversity. Developing family and community based programs at state parks and public lands which reflect the diversity of the community which they serve and develop culture-centric messaging materials will provide the foundation for designing training programs to increase cultural competence. In order to achieve this end, partnerships must be forged with academic, community-based groups and institutions to foster greater understanding of the unique needs of underserved populations.

2. **Establish a statewide grant program that will provide funds to community groups, schools, and non-profits for the purpose of providing at-risk and underserved children with outdoor recreational and learning experiences.**

   By developing age-based resources for schools that enhance awareness of the unique environmental opportunities and issues within underserved communities and incentives for schools and community groups to utilize Maryland's natural resources, existing community groups can be enriched by providing training and resources in order to develop content that addresses local issues. Additionally, environmental leadership will be developed within underserved communities by creating partnerships between existing environmental education organizations and grassroots community groups.

3. **Establish a mentor program that assists adult leaders of community and school-based youth groups in underserved communities with the knowledge and skills to comfortably and safely provide outdoor experiences to children.**

   Research has shown that kids who have a positive role model in the environment will grow up to be positive roll models with regard to environmental actions they take. That is why it is imperative that we identify coalition partners from a broad scan of providers, funders, business/corporations, and activists and provide frequent networking opportunities to enhance collaborative efforts and encourage peer to peer mentoring opportunities among the partners. To this end, we can establish a dedicated social networking website to facilitate communication among the partners and offer tailored training to enhance cultural competency and promote multiculturalism as an organizational goal for all partners. Providing partners with one-on-one assistance from experienced organizational development professionals in creating culturally competent and multicultural organizations will ensure program success.

4. **Develop a plan to increase employment opportunities and career paths for the minority and underserved communities.**

   This goal can be achieved through working with agencies that manage public lands, encouraging them to increase minority employment in the fields of environmental education and parks and start early in the pipeline by educating younger students as to the exciting opportunities that exist in this field. All providers and stakeholders in the field will need assistance with better tactics for minority recruitment. i.e., look for ways to attract and retain minorities beyond the traditional approaches to recruiting for these fields. There is a need for increased opportunities for recruitment at historically black colleges and universities and establishing targets and goals for minority employment at providers and stakeholders. Tying public funding to increased minority employment at providers and stakeholders would be an incentive for agencies to embrace this mission.

Short Term Actions:

Action	Lead	Support Options
Evaluate existing community participation programs and identify approaches and opportunities to assure inclusion of underserved communities.	DNR/local Parks & Recreation Associations	No new funding needed
Develop a plan to increase employment opportunities and career paths for the minority and underserved communities.	DNR/Living Classrooms	No new funding needed

Long-Range Vision:

A sustainable mentor program has been developed within environmental agencies (government and non-profit) to give young people experiences in natural resources and environmental careers. A grant program has been established to allow existing venues to expand their outreach to underserved communities. State natural resource and environmental agency priorities are aligned with outreach to underserved youth.

4.2 Environmental Literacy

(2a)A review of current environmental education efforts in Maryland schools, including the environmental education bylaw, the Chesapeake 2000 commitments, and student environmental literacy levels.

Strategy:

Review of Current Environmental Education Efforts

Continue and expand upon existing environmental education efforts to ensure that every child has an outdoor learning opportunity every year.

Recommendations to be Implemented:

Approve the draft Maryland Environmental Literacy Standards and incorporate environmental literacy goals into State graduation requirements.

Provide an annual meaningful outdoor environmental education experience for every student every year, pre-K through grade 12.

Overview:

The purpose of Maryland's Environmental Education program is to enable students to make informed decisions and to take actions that create and maintain an optimal relationship between themselves and the environment, and to preserve and protect the unique natural resources of Maryland, particularly those of the Chesapeake Bay and its watershed.

In 1990, Environmental Education was mandated as part of the PreK-12 program through the Code of Maryland (COMAR13A.04.17 Environmental Education). The Maryland Voluntary State Curriculum (VSC) incorporates environmental education issues study and concepts, standards and objectives that are tied to the national standards in environmental education, the sciences, health, and social studies. Environmental education is infused throughout the Voluntary State Curriculum in elementary and middle school and through the Core Learning Goals in high school.

During high school, students can study biology, environmental science, ocean science, and/or an Advanced Placement Environmental Science course or pursue a career in Environmental, Agricultural, and Natural Resources Systems through the Career Technology program. The Maryland State Department of Education (MSDE) provides leadership and services to twenty-four local education agencies (LEAs) and serves over 880,000 PreK- 12 students. School systems work with many colleges, universities, community colleges, government agencies, and non-formal education organizations to provide meaningful outdoor experiences for students and professional development for educators. Eight school systems provide student experiences, teacher training, and technical assistance through their own Environmental and Outdoor Education Centers, while other school systems work with partners to provide outdoor environmental activities tailored to meet the curricular needs of the school system or provide opportunities on their school grounds and in their communities.

Key Goals:

1. **Align Environmental Education programming with the Governor's seven Education Priorities.**

   Prek-12 public education efforts should be designed to reinforce state education priorities, be aligned with existing state education policies, respect the role of local Boards of Education in determining policy for their students, and build upon existing programs. Education activities should also address current Maryland issues such as climate change, energy conservation and efficiency, the Chesapeake Bay, environmental health, and related issues, within the context of the Voluntary State Curriculum and high school Core Learning Goals.

2. **Expand the number and diversity of environmentally-related STEM internships and opportunities for teachers and students through partnerships with higher education, laboratories, state agencies and business/industry.**

   The Maryland Department of Education is committed to promoting a Science, Technology, Engineering, and Mathematics (STEM) education policy agenda by supporting a rigorous STEM education to a broader set of students, thereby increasing opportunities for young people and meeting pressing workforce needs; recruiting, preparing, and retaining teachers of the quality needed to be internationally competitive in STEM education and the world economy; facilitating public information and engagement programs to educate and excite students, teachers, parents, and policymakers about the issues we face in education and the workplace and about the new opportunities the state's STEM initiatives will bring to the public at large; and engaging businesses and higher education in public/private partnerships to support the redesign of the PreK-20 STEM education system. Opportunities abound for students in environmental fields related to the STEM initiative. Currently, students are interning with scientists in the fields of biology, microbiology, energy, and land use policy and participating in summer programs and nationwide-sponsored programs and challenges. Career education and internship opportunities in engineering within environmental fields will be a featured part of further program development.

3. **Expand the number of MSDE environmental resource teachers to assure serving high need areas across the state.**

4. **Confirm that the changes included in this document are reflected in the Environmental Education Bylaw and then make any required modifications.**

Short Term Actions:

Action	Lead	Support Options
Strengthen the VSC by requiring at least one outdoor experience each year.	MSDE	NOAA Bay Watershed and Education Training Grant program (B-WET)
Strengthen environmental literacy requirements in the VSC by aligning the VSC to the Maryland Environmental Literacy Standards.	MSDE	
Designate, within each LEA, appropriate existing or newly designed courses of study that would meet the graduation requirement.	LEA	

Long-Range Vision:

High-performing, environmentally literate Maryland graduates will increasingly enter Science, Technology, Engineering, and Mathematics (STEM) careers.

(2b) Identification of Curriculum Necessary to Develop Environmentally Literate Students

Strategy: Identification of Curriculum

Use the existing Voluntary State Curriculum and Core Learning Goals as a basis for further incorporating environmental literacy into school practices.

Recommendations to be Implemented:

- **Require for graduation that every high school student take and pass a designated environmental literacy course of study.**
- **Adopt the Maryland State Environmental Literacy Standards**
- **Provide an annual meaningful outdoor environmental education experience for every student every year, pre-K through grade 12**

Overview:

The North American Association for Environmental Education (NAAEE) Guidelines, *Elements of a State Literacy Plan,* recommends the identification of specific content standards, content areas, and courses or subjects where instruction takes place. Alignment of PreK-8 content standards and high school Core Learning Goals with the Environmental Literacy Standards are presented at http://www.marylandpublicschools.org/MSDE/programs/environment/.

The Maryland **Voluntary State Curriculum (VSC)** defines what students should know and what they should be able to do at each grade level in these content areas:

- Science
- Social Studies
- Health & PE
- Technology Education
- Maryland Technology Literacy for Students
- Mathematics
- Reading / English Language Arts
- English Language Proficiency
- Fine Arts
- Foreign Language

The VSC was developed by hundreds of educators from across the state. These educators were committed to the development of clear, concise, well-articulated documents that would afford every student access to a rigorous and meaningful education. The VSC was subject to external review from Achieve, Inc. *Achieve, created by the nation's governors and corporate leaders, is an independent, bipartisan, non-profit education reform organization that helps states raise academic standards and graduation requirements, improve assessments and strengthen accountability* (Source: http://www.achieve.org/). The VSC is the document that aligns the Maryland Content Standards and the Maryland Assessment Program. The curriculum documents are formatted so that each begins with content standards or broad, measurable statements about what students should know and be able to do. Indicator statements provide the next level of specificity and begin to narrow the focus for teachers. Finally, the objectives provide teachers with very clear information about what specific learning should occur.

Environmental Science is Goal 6 of the Science VSC. *Environmental Issues* provides the platform from which the grade-level science and/or social studies concepts may be integrated. Environmental Education concepts are also embedded within the VSC in Life Science and Earth Sciences, Social Studies (geography, economics, and government), health, Family and Consumer Sciences, and Fine and Performing Arts. Environmental topics and examples are used within reading, English/Language Arts, mathematics, and technology education courses of study. Physics and chemistry can be taught using environmental concepts.

Key Goals:

1. **Continue to promote and train educators to use the *Investigating and Evaluating Environmental Issues and Actions* (IEEIA) model through nationally certified trainers.**

   The Hungerford/Volk model *Investigating and Evaluating Environmental Issues andActions* (IEEIA) is the template for instruction accepted by Environmental Education

   Coordinators in Maryland. The IEEIA model is Standard 1.0 of the Maryland Environmental Literacy Standards. IEEIA is

a middle and high school program that promotes environmental citizenship for large numbers of students over long periods of time. The IEEIA program has been shown to develop strong environmental responsibility in students. Evidence gathered over 20 years of work with teachers indicates that students of all ability levels show greater gains in knowledge of responsible citizenship action skills as a result of participating in the program. Students also report taking more actions in their communities. Parents of students in the program observe more voluntary citizenship behaviors on the parts of their children. The instructional elements in the IEEA program include *Environmental Problem Solving* and *Developing and Implementing Environmental Action* Strategies.

2. **The State Board of Education approves the draft Maryland Environmental Literacy Standards.**

   The Maryland State Environmental Literacy Standards were developed in 2007 to identify and emphasize the infusion of environmental literacy knowledge, skills and processes, within the Maryland Voluntary State Curriculum and high school Core Learning Goals. MSDE, in cooperation with scientists, professors of science education and environmental science, classroom teachers, and Environmental Education Coordinators developed and reviewed these standards using national environmental, science, social studies, and health standards, taking into consideration the current environmental initiatives in the State of Maryland.

   The Maryland State Environmental Literacy Standards indicators and objectives are drawn from existing courses of study and represent the knowledge, skills, habits of mind, and attitudes that a student will have upon graduating from a Maryland high school. This report includes recommendations for updating the content in some curricular areas as the environmental field evolves. The draft (December, 2008) Standards are available at http://www.marylandpublicschools.org/MSDE/programs/environment/. Adoption of the Standards is a critical element for assuring the integration of the recommendations in this plan will be implemented across the state.

3. **Revise the high school Environmental Science draft Core Learning Goals to reflect current environmental knowledge, issues and skills.**

   The Maryland Core Learning Goals were developed to define core learning goals in high school science, government, English and Mathematics. Environmental education concepts are embedded within the biology and government goals. All students are required to take these courses in order to obtain a high school diploma in Maryland.

   The goals connect with the "Goals 2000" reform at the national level and adapt the national standards in the sciences and Social Studies within the framework of curricula in

   Maryland schools. The learning goals serve as the basis of high school assessment. The Environmental Science Core Learning Goals will need to be revised to address the expectations for Environmental Literacy as defined

4. **Strengthen the correlation between STEM Education and environmental education. (see 2a Key goal 2 above for a description of STEM, the current focus and efforts to expand to include offerings in environmental engineering and other environment related careers).**

5. **Formally recognize and expand GREENet (Governor's Regional Environmental Education Network) to better coordinate environmental education efforts across the State.**

   Governor's Regional Environmental Education Network (GREENet) is a networking partnership that provides a forum to bring high-quality environmental education opportunities to teachers, students and to all Maryland's citizens. GREENet committees are dedicated to sharing information and resources, coordinating efforts, and providing mutual support to encourage environmental knowledge and stewardship. The GREENet program, described in the report of the Governor's Commission on Climate Change, serves as the nucleus for the establishment of a statewide education plan.

   The purpose of GREENet is to provide a formal structure through which these diverse stakeholders can accomplish their organizations' goals and objectives while pooling talents, leveraging resources, and sharing knowledge with like-minded partners in a larger, more focused way. Expansion of this network would enable stronger partnerships to support the implementation of this Plan throughout the state focusing on regional issues and needs.

Short Term Actions:

Action	Lead	Support Options
Approve the Maryland Environmental Literacy Standards.	SBOE	
Revise the high school Environmental Science draft Core Learning Goals to reflect current environmental knowledge and skills.	MSDE	MSDE sets minimum standards. All LEAs may set requirements beyond the state. Any additions to minimal standards could be shared among LEAs.

Long-Range Vision:

1. Student internship, mentorship and job-shadowing opportunities have been developed in each region of the State.
2. Partnerships between school systems and non-formal education organizations have been expanded.
3. The Career Education and Technology Task Force (CTE), a subcommittee of the Governor's MD P-20 Council, provides expanded opportunities for students to access rigorous CTE programs of study that include environmentally-related content and skills.

(2c) Identification of Model Outdoor Field Experiences that can be Integrated into the Regular School Curriculum

Strategy: Identification of Model Outdoor Field Experiences

Identify a variety of successful program delivery models so that they can be replicated in other jurisdictions.

Recommendation to be Implemented

Provide an annual meaningful outdoor environmental education experience for every student every year, pre-K through grade 12.

Overview:

In order to develop environmental literacy, students must be exposed to a *variety* of experiences as part of the regular curriculum, and engage in *multiple* opportunities throughout their school years. Maryland offers several unique models of programming. Experiences may be sponsored by the local school system, MSDE, non-formal education provider or other partner. Programs may be day programs or residential programs lasting from two days to two weeks. Programs are implemented across a grade level during the school year; other programs are run after school or during the summer.

The Maryland Green School Award (MAEOE) program is a nationally-recognized model. Outdoor education centers, operated by eight school systems, provide day programs, residential programs and in-class and on-school grounds technical assistance to schools. Other outdoor education centers, operated by non-profit and for-profit organizations, partner with school systems to provide outdoor experiences for students around the state. Maryland is the only state to require Student Service Learning as a graduation requirement. Environmental projects comprise the majority of projects completed by students. Currently, 390,000 students participate in environmental restoration, protection and mitigation projects through Student Service Learning.

Key Goals:

1. **Expand the number of outdoor education centers, especially on the Eastern Shore and Western Maryland, to provide more students with this type of opportunity.**

   Many Maryland students, as part of the regular curriculum, enjoy the benefits of participating in environmental education through outdoor environmental education centers. Eight centers are owned and operated by school systems and others are owned by private organizations that have close partnerships with the school system. Students in school systems with these facilities visit the site for 3-5 day overnight stays to experience environmental education in a hands-on, outdoor setting. The centers can also provide residential experiences as well as day programs for students of many age levels. An outdoor center experience should not be considered to be the entire environmental education program in a school system. Students should learn through regular curriculum experiences, day programs, school-based projects, off-site projects and sites as well as residential centers and summer and after-school programs. The centers provide a grade-level, systematic outdoor experience for more than 80,000 students each year. The character and program of each center reflects the curriculum of the local school system. Activities are developed that take full advantage of the local environment.

   There are large areas of the state where outdoor learning centers are not available such as Western Maryland and the lower eastern Shore. Efforts must be made to fill in these gaps to assure access to all of Maryland's children.

2. **Provide an easily accessible database of examples of model outdoor experiences for educators.**

   Although there is an abundance of materials and data available for educators to use in their classrooms or education center, it is often not easily found. Providing a one-stop-shop would greatly enhance the ability for lessons to be planned and executed in an interdisciplinary approach that provides local and regional relevance to the student.

3. **Ensure that students have high quality, rigorous experiences with service providers that are highly trained in science(s) and issues investigation.**

   All service providers must have access to the resources and training to assure they provide the students with the most up to date understanding of the science and the investigation techniques and approaches used by leading researchers as well as appropriate techniques for students to do their own investigation of specific issues.

Short Term Actions:

Action	Lead	Support Options
Identify one organization to house all environmental education opportunities for educators (professional development, outdoor classrooms, nature centers, parks with education programs, etc.)	MSDE	MAEOE

Long-Range Vision:

1. Environmental outdoor education centers and school systems have the capacity, at a local, regional, or statewide scale, to provide students at each level (elementary, middle, and high) with an outdoor experience.
2. Non-formal education service providers are highly trained.
3. Formal educators are able to pursue an endorsement in Environmental Education as part of the recertification process.

(2d) Professional development opportunities for in-service teachers, pre-service teachers, and non-formal environmental educators.

Strategy: Professional Development Opportunities

Expand upon existing high quality, effective professional development opportunities and provide a mechanism for educators to access such opportunities.

Recommendation to be Implemented:

Provide professional development for teachers, state park rangers and naturalists, and other service providers.

Overview:

State PreK-12 Environmental Education Coordinators agreed that there are a sufficient number and variety of professional development activities available for their professional staff and for teachers. Access to the programs is cited as the major problem. Substitute teachers are difficult to get. Many school systems have policies that prohibit field trips because of the difficulty of getting substitutes, lack of funding for substitutes, lack of transportation costs, and fear of students losing class time for field trips. In addition, Environmental Education Coordinators noted that environmental education staff and classroom teachers have different professional development needs.

Current opportunities for teacher professional development and access to resources are available through the following venues.

- Issues-Based instruction, led by nationally-qualified personnel, is being offered county-wide to a teaching audience designated by LEA Environmental Education Coordinators.
- The Professional Development Teacher Accreditation Board and the Maryland State Board of Education are currently (Winter, 2008) considering the approval of a teacher endorsement for Environmental Education to be added to an existing teaching certificate through higher education.
- The Maryland Association of Environmental and Outdoor Education (MAEOE) annually sponsors the largest environmental state conference in the nation.
- Teachers both attend and present at this conference. They may also participate in schoolyard habitat training through MAEOE. MAEOE's website provides a central forum for professional development and job opportunities. MAEOE has created a "certificate" program, acknowledging non-formal educators who have undergone extensive training in environmental education.
- Non-profit organizations, for-profit organizations, and state agencies provide professional development activities.
- Higher education provides a wide variety of graduate courses that enhance teachers' knowledge and skills in environmentally-related areas.

Key Goals:

1. **Provide workshops on Issues-Based instruction, led by nationally-qualified personnel.**
2. **Promote high quality, effective professional development activities, aligned with Teacher Professional Development Standards especially on the issues of most concern to Maryland.**
3. **Work with higher education institutions to provide a wide variety of undergraduate and graduate courses that enhance teachers' knowledge and skills in environmentally-related areas.**

Short Term Actions:

Action	Lead	Support Options
Issues-based instruction professional development for teachers	MSDE	Maryland Teachers who are nationally certified
Professional development opportunities, including grant proposal writing, through non-profit, for profit, and state agencies	Varies (promoted by MSDE and MAEOE)	CBT Local community corporate partners
Work with professional development providers to ensure they are meeting PD guidelines and meeting state learning standards	MSDE	

Long-Range Vision:

1. **Through work with the Division of Instruction and LEAs, teachers receive adequate outdoor education and environmental education training via a variety of venues.**
2. **Through coordinated efforts between the MSDE Division of Instruction and the Maryland Division of Business Services School Facilities Branch, green buildings and grounds and operations are incorporated within school activities where appropriate.**
3. **Professional environmental education staff has been acquired at LEAs and the MSDE Environmental Education Office to broaden the MSDE Regional Office proposal.**
4. **Funding is available for community and school-based, on-campus projects to reduce or eliminate transportation costs and provide students with daily interaction with their work.**

(2e) Methods to annually measure and report at the State and local level, progress of public school students toward becoming environmentally literate graduates.

Strategy: Measurement and Reporting of Progress

Recommendation to be Implemented

Provide an annual meaningful outdoor environmental education experience for every student every year, pre-K through grade 12.

Require for graduation that every high school student take and pass a designated course of study on environmental literacy as defined in this document.

Establish a comprehensive initiative to green all schools and school grounds to create opportunities for outdoor learning experiences for students and members of the community.

Overview:

Assessing the levels of student attitudes, knowledge and behavior is the key to measuring the effectiveness of our environmental education programs. Maryland has participated in, and continues to participate in, a number of studies that measure the impact of environmental education on student achievement, school climate, and teacher satisfaction. Additional studies have focused on student acquisition and retention of content knowledge and the development of field skills, critical thinking processes, as well as the affective domains of learning (attitude towards the environment and stewardship ethic).

MSDE and selected Maryland public schools are participating in a national study to determine effective methods of measuring environmental literacy. This program, the National Environmental Literacy Assessment, is a national baseline study of middle school students' understanding of the environment. It is a three-year study that involves the U.S. Environmental Protection Agency (EPA) Office of Environmental Education, the National Oceanographic and Atmospheric Administration (NOAA) Office of Education, and the North American Association (NAAEE) for Environmental Education.

During Year 1, Spring, 2007, researchers conducted an environmental literacy survey of sixth and eighth grade students in 48 randomly selected middle schools across the United States in order to establish a baseline of current environmental literacy.

During Year 2, (2008-2009), data on student environmental literacy will be gathered from programs, schools and classes that currently incorporate Environmental Education within instruction. The environmental literacy of these students will be compared to the randomly selected group in Year 1. Relationships will then be explored between program characteristics and environmental literacy in order to measure the relative effectiveness of various environmental programming models. Maryland has submitted applications to include several of its individual school programs and program models to be included as part of the study. During the third year of the study, the data will be made available to other researchers so that additional questions can be asked and answered.

Key Goals:

1. **Work with partners to secure funding to begin a baseline assessment of student knowledge and attitudes towards the environment.**
2. **Utilize baseline data to evaluate and improve existing programs offered to students.**

Short Term Actions:

Action	Lead	Support Options
Compile a list of potential funding sources and partners	DNR	
Work with partners to submit grants	DNR	CBT
Utilize alternative assessment tools to measure environmental literacy	MSDE	

Long-Range Vision:

1. **Data gathered is being used to measure progress of the *Children in Nature* initiative and to re-align program objectives.**
2. **Environmental Literacy goes beyond content knowledge. As defined earlier, an environmentally literate citizen takes positive actions toward the environment, and as such, indicators of behavior (energy conservation, recycling, etc.) are examined to measure environmental literacy.**
3. **Student environmental literacy levels are being assessed via methods such as, but not limited to: portfolios, number of student service learning hours in environmental activities, data from participation in the National Environmental Literacy Assessment**

Strategy: Plan Revision

Each LEA should include in its Master Plan a summary of its environmental education program.

Recommendations Implemented:

- **Provide an annual meaningful outdoor environmental education experience for every student every year, pre-K through grade 12.**
- **Require for graduation that every high school student take and pass a designated environmental literacy course of study.**

Overview:

In 2003, local school systems were required under Bridge to Excellence Public Schools Act (BTE) to develop a 5-year Master Plan that outlined strategies for improving student achievement and eliminating achievement gaps. Each year, an update to the plans is submitted to the Maryland State Department of Education and reviewed for sufficiency and to determine if progress is being made by individual school systems and by the State. Senate Bill 907, which amended BTE, requires that local boards of education continue submitting updates to their comprehensive master plans in October 2008 and 2009 and to submit new 5-year comprehensive plans by October 15, 2010.

Key Goals:

1. **Include Environmental Education in the next Master Plan revision.**

   Inclusion of the Environmental Education in the Master Plan is a critical step toward assuring the implementation of the recommendations of this Plan is carried out in the local schools.

Short-Term Actions:

Action	Lead	Support Options
LEAs will plan their programs for each grade level	LEAs	

Long-Range Vision

Funding is available for LEAs to implement their plans.

4.3 Baseline Data

Devise a method of measuring baseline data and increased time spent in nature by children.

Strategy:

Secure funding from private sources for obtaining accurate data using nationally accepted procedures and measurements on current student knowledge and attitudes toward the environment and use that information to compare data in five year increments.

Overview:

Develop a committee comprised of public and private partners to seek traditional and alternative funding sources for gathering of data.

Key Goals:

1. **Employ a psychometrician to design a data collection protocol and system.**
2. **Form a small committee to determine measurement parameters.**
3. **Create a list of potential funding sources.**
4. **Gather baseline data by the end of the 2009-2010 school year.**

   NAAEE guidelines for evaluation suggest using traditional written tests, counts of students involved in activities, or the number of students in after-school programs. Workgroup participants agree that measuring knowledge level is inadequate and is not a true measure of environmental literacy. Because one of the desired outcomes of environmental literacy is a change in behavior, it was determined that measures be centered on data that indicate action and behavior change.

   Many of the studies currently available are focused on demonstrating the effectiveness of environmental education activities on student learning as opposed to using results for evaluation of program effectiveness. The purpose of this evaluation is to provide data that evaluates the effectiveness of the proposed programs and informs program improvement.

(2f) A process for revising or updating the environmental literacy plan every five years or as needed.

Short-Term Actions:

Action	Lead	Support Options
Form a committee to determine measurement parameters	DNR	No new funding
Create a list of potential funding sources	DNR	No new funding

Long-Range Vision:

- Data is being gathered and used to track student knowledge and attitudes about the environment as well as the amount of unstructured time spent in nature.
- Data is being gathered and utilized to suggest changes to programs to increase knowledge and/or improve attitudes toward the environment and the amount of unstructured time spent in nature.

4.4 Barriers

Identify opportunities and barriers to support implementation of programs in local school systems and on public lands.

A number of barriers were identified throughout the process of developing the Plan and a more detailed discussion can be found in

Section 2.0. A few overarching barriers have emerged that not only provide a reason for the current reduction in connection of children and their families to nature but also provide the foundation for the recommendations found throughout this Plan. Those key barriers are:

- Public awareness of the importance for children being connected to the natural world;
- The lack of comfort parents and adult guardians or mentors have with being in a natural unstructured setting;
- Lack of coordination between state and local government agencies, school systems, and non-profit groups on the development of infrastructure including the outdoor classrooms,
- Schoolyard habitats and trails that don't connect schools and communities to parks and open space.
- Lack of financial assistance or awareness of grants available for training, transportation, substitute teachers, schoolyard habitat development, etc.
- Current demand on teachers and Local Education Agencies regarding meeting existing regulatory requirements and outcomes for students in relation to the time available during the school day.

The Partnership developed the 10 recommendations found in Section 3 of this document to address these barriers. Section 4 provides the detailed strategy to implement those recommendations and address these barriers. In addition, Section 5.1 discusses the need for an approach to initiating a public awareness campaign as a first step in the implementation of this Plan.

5.0 IMPLEMENTING THE PLAN

The goals, strategies and visions outlined in this report suggest bold changes for Maryland's schools and communities, children and families. They are changes that, if implemented, will mark a pivotal moment in time for education, environmental stewardship and the ability of Maryland's young people to personally connect with nature in ways that promote mental, emotional and physical health and well-being throughout their lives.

5.1 Early Actions

Strategy:

Develop and execute a public awareness campaign to engage citizens in the successful implementation of the plan.

Overview:

The successful implementation of the Children in Nature Plan for State Environmental Literacy Plan depends on the engagement of parents, teachers, and other adult leaders. Until the adults in their lives understand the immediate and long-term benefits of outdoor recreation and environmental education on children, communities, and our natural environment, many children will continue to miss out on these rich opportunities. A multifaceted communications strategy is needed to excite and motivate Marylanders about the unique natural areas available to them and the positive impacts they can derive by accessing them.

Key Goals:

1. Introduce an Outdoor Bill of Rights for Maryland Children as a tool for engaging the public.
2. Launch a statewide campaign for Children in Nature to educate parents, teachers, and other adult leaders and caregivers about the many benefits of the broad spectrum of outdoor play and learning opportunities described in this plan.
3. Host annual Children in Nature Summits to bring together children, partners in formal and non-formal education, state park managers, local governments, and funders to celebrate and evaluate progress made towards the fulfillment of the Children in Nature Plan.

Short Term Actions:

Action	Lead	Support Options
Introduce an Outdoor Bill of Rights	DNR	No new funding
Host an annual Children in Nature Summit	DNR	$100,000 ; possible funding support through grants, conference fees, private sponsorships

Long-Range Vision:

- Reduce barriers toward connecting youth with nature through cooperative partnerships and leadership development of youth.

- Increase public awareness of the issue and its importance to the overall development and health of students.

5.2 Financing the Plan

Strategy:

A task force composed of key state agency and Partnership representatives should be charged with developing the short- and longer-term funding recommendations for plan implementation and, on an annual basis and in concert with budget development processes, forwarding these recommendations to relevant agencies and funding partners

Overview:

The ambitious recommendations proposed by this plan were generated through the successful collaboration between MSDE, DNR and a broad range of additional stakeholders, all of whom will play important roles in implementing this plan. Many of the goals established in this plan will not require new sources of revenue to be met, but can instead be accomplished through an on-going assessment of existing programs and budgets in light of these goals and a strategic and opportunistic realignment of spending priorities in support of them. Others will require an infusion of new funding, a significant share of which should be sought from private and voluntary sources.

Actions:

The task force should identify recommended actions that will not require new revenue and work with MSDE, DNR, local government and education agencies to develop a strategy to coordinate and re-prioritize existing programs and budgets in support of those actions.

Appendices

Executive Order

DNR Children in Nature Matrix Team Strategic Plan

HR 3036 & S1981

Environmental Education Regulation ***13A.04.17***

Chesapeake 2000 Agreement – Meaningful Bay Experiences

References

Research & Resources

Glossary

Partnership and Committees

Appendix A

Executive Order

The State of Maryland

Executive Department

EXECUTIVE ORDER
(01.01.2008.10)

Maryland Partnership for Children in Nature
(Amends Executive Order 01.01.2008.06)

WHEREAS, The natural world is a successful model for many values that human communities seek: continuity, stability and sustenance, adaptation, sustained productivity, renewal without exhaustion of resources, and thriving in an environment of diversity;

WHEREAS, To sustain the natural world in Maryland-including the Chesapeake Bay and hundreds of thousands of acres of diverse land and habitat-requires the stewardship of future generations and business leaders;

WHEREAS, Stewardship is not possible without a strong sense of connection to the natural world;

WHEREAS, Maryland's children are losing their connection with our natural world, an alienation that threatens the future of Maryland's great natural resources and the quality of life for future citizens, diminishes use of the senses, creates attention difficulties and causes higher rates of physical and emotional illness and obesity;

WHEREAS, Spending frequent time outdoors in unstructured and structured experiences is the best way to develop a connection to nature and the foundation on which to build an environmental stewardship ethic;

WHEREAS, There is a need to continue and expand outreach that will engage individuals and organizations in the minority community in partnerships with State government in promoting a high standard of life through the conservation, restoration and preservation of natural resources;

WHEREAS, Environmental education increases student engagement in science, improves student achievement in core subject areas, and increases student awareness about individual actions they can take to restore the health of the natural environment; and

WHEREAS, Maryland must renew its efforts to ensure that its children grow to become informed and responsible stewards of the environment and prepared for future environmental challenges and opportunities as individual citizens and as members of the workforce.

NOW, THEREFORE, I MARTIN O'MALLEY GOVERNOR OF THE STATE OF MARYLAND BY VIRTUE OF THE AUTHORITY VESTED IN ME BY THE CONSTITUTION AND THE LAWS OF MARYLAND, HEREBY AMEND EXECUTIVE ORDER 01.01.2008.06 AND PROCLAIM THE FOLLOWING EXECUTIVE ORDER, EFFECTIVELY IMMEDIATELY:

A. Established. There is a Maryland Partnership for Children in Nature (The Partnership) to promote outdoor experiential activities and environmental education for Maryland's young people and to build a coalition of ongoing support for these endeavors.

B. Membership. The Partnership shall include the following members:

(1) The Secretary of Natural Resources, or the Secretary's designee;

(2) The Superintendent of the State Department of Education, or the Superintendent's designee;

(3) One representative of the Chesapeake Bay Trust;

(4) Two representatives of non-profit organizations dedicated to environmental education;

(5) One representative of the Maryland Association for Environmental and Outdoor Education;

(6) One representative of a Parent Teacher Organization

(7) Two representatives of local governments that have demonstrated leadership in sustainable development practices;

(8) One representative (teacher or principal) from a Maryland Green School that has completed a Schoolyard Habitat project;

(9) ONE OUTDOOR SCHOOL PRINCIPAL;

(10) ONE SCHOOL SUPERINTENDENT;

(11) ONE ENVIRONMENTAL EDUCATION TEACHER;

[(9)] (12) Two representatives of urban youth-based organizations;

[(10)] (13) One representative of the Maryland Recreation and Parks Association;

[(11)] (14) One representative of the pediatric medical field;

[12)] (15) A former member of the Task Force on Minority Participation in the Environmental Community;

[(13)] (16) Two representatives of the business community with demonstrated leadership in supporting children in nature; and

[(14)] (17) One representative of the National Wildlife Federation.

C. Appointment and Terms. The members identified in B(3) through B[(14)] (17) of this Executive Order shall be appointed by the Governor, with the advice of the Secretary of Natural Resources and the Superintendent of Education. Such members shall serve at the pleasure of the Governor for 2-year terms.

D. Meetings. The Partnership shall meet at the call of the Chairs.

E. Procedures. A majority of the Partnership constitutes a quorum for the transaction of any business. The Partnership may adopt any other procedures and by-laws necessary to ensure the orderly transaction of business.

F. Expenses. Members of the Partnership shall serve without compensation for their services, but they may receive reimbursement for reasonable expenses incurred in the performance of their duties in accordance with the Standard State Travel Regulations and as provided in the State budget.

G. Consultation. The Partnership shall consult with and engage leadership and staff from all other Maryland Executive Departments and independent agencies, federal and local government representatives.

H. Chair. The Partnership shall be co-chaired by the Secretary of Natural Resources, or the Secretary's designee, and the Superintendent of Education, or the Superintendent's designee.

I. Staff Coordination. The Department of Natural Resources shall provide staff support for the Partnership in coordination with the State Department of Education and other State agencies and other partners as directed by the Chairs.

J. Working Groups. The Partnership shall be supported by working groups, to be established by the Chairs, to lead the major tasks identified under this Executive Order.

K. Responsibilities. The Partnership shall promote the well-being of youth by providing opportunities for increased time spent outdoors and environmental literacy through outdoor experiential activities and formal and non-formal environmental education. The Partnership shall:

(1) Develop and implement a plan to provide youth with structured and unstructured opportunities for play, outdoor recreation, learning and scientific study to include:

(a) Strategies that provide increased support for Schoolyard Habitat Programs, which support the conversion of schoolyards to natural habitats for play and outdoor classrooms;

(b) Creation of trails to connect communities, parks and schools via trail systems that encourage walking, biking and increased time outdoors by youth and families;

(c) Greening initiatives that create nature play areas within communities to provide outdoor experiences for children close to home;

(d) A statewide Civic Justice Corps to provide at-risk youth with opportunities to serve in conservation crews in State Parks and other public lands in partnership with the Maryland Department of Juvenile Services and community non-profit organizations;

(e) An outdoor classroom program that provides voluntary curriculum-aligned programming and service learning opportunities on public lands in cooperation with local county school systems, local parks and non-profit organizations;

(f) Increased access to naturalists on State Parks and public lands to provide interpretive activities for children and families to enhance their discovery and enjoyment of Maryland's natural resources; and

(g) Increased opportunities for under-served communities to access Maryland State Parks and public lands through partnerships with organizations that serve minority students;

(2) Develop and implement a State Environmental Literacy Plan to include:

(a) A review of current environmental education efforts in Maryland schools, including the environmental education bylaw, the Chesapeake 2000 commitments, and student environmental literacy levels;

(b) Identification of curriculum necessary to develop environmentally literate students;

(c) Identification of model outdoor field and service learning experiences that can be integrated into the regular school curriculum;

(d) Professional development opportunities for in-service teachers, pre-service teachers, and non-formal environmental educators;

(e) Methods to annually measure and report at the State and local level, progress of public school students toward becoming environmentally literate graduates; and

(f) A process for revising or updating the environmental literacy plan every five years, or as needed;

(3) Devise a method of measuring baseline data and increased time spent in nature by children;

(4) Identify opportunities and barriers to support implementation of programs in local school systems and on public lands; and

(5) Present these plans and a status report on their implementation to the Governor by January 1, 2009.

GIVEN Under My Hand and the Great Seal of the State of Maryland, in the City of Annapolis, this 18th Day of August, 2008.

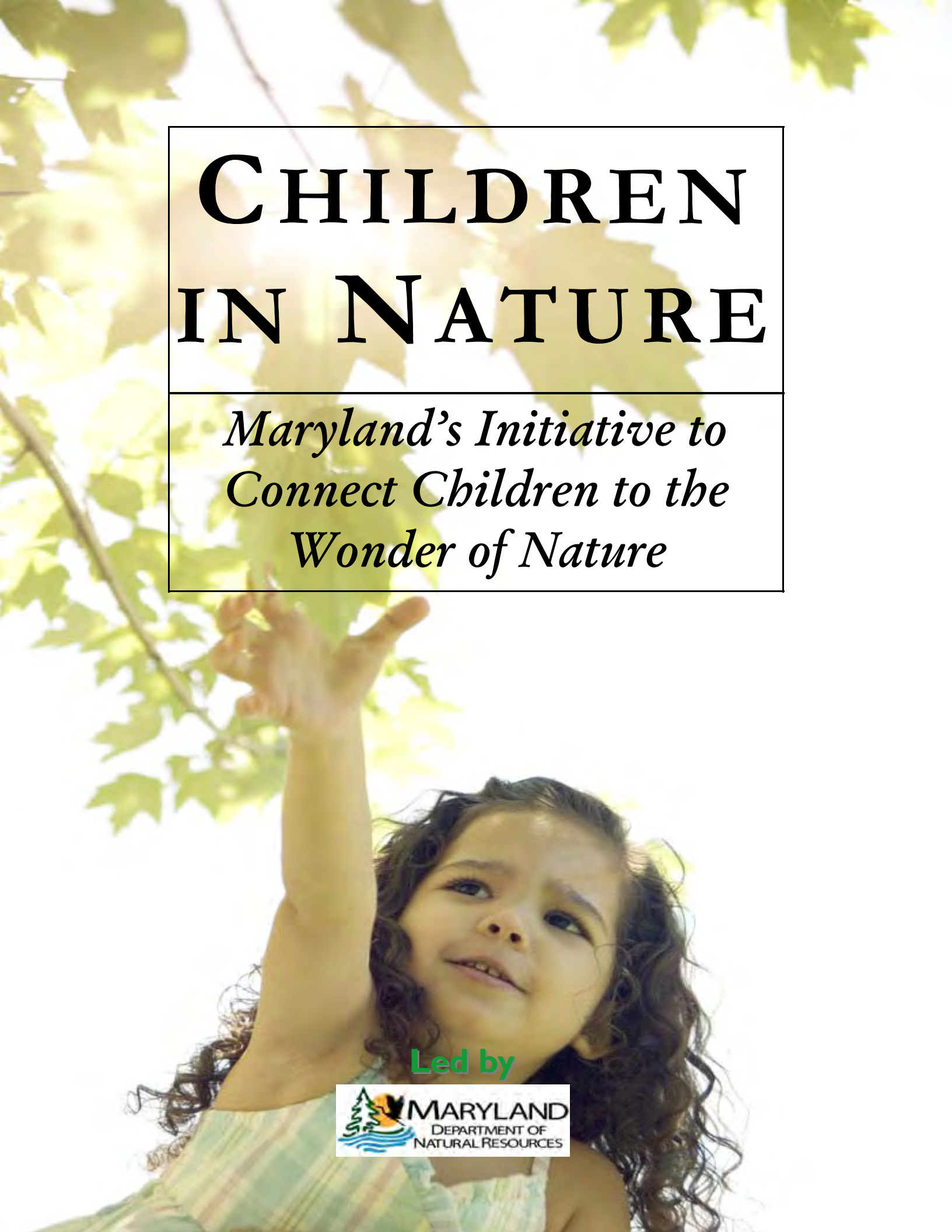
Martin O'Malley
Governor

ATTEST:

John P. McDonough
Secretary of State

Appendix B

DNR Children in Nature Matrix Team Strategic Plan



Children in Nature

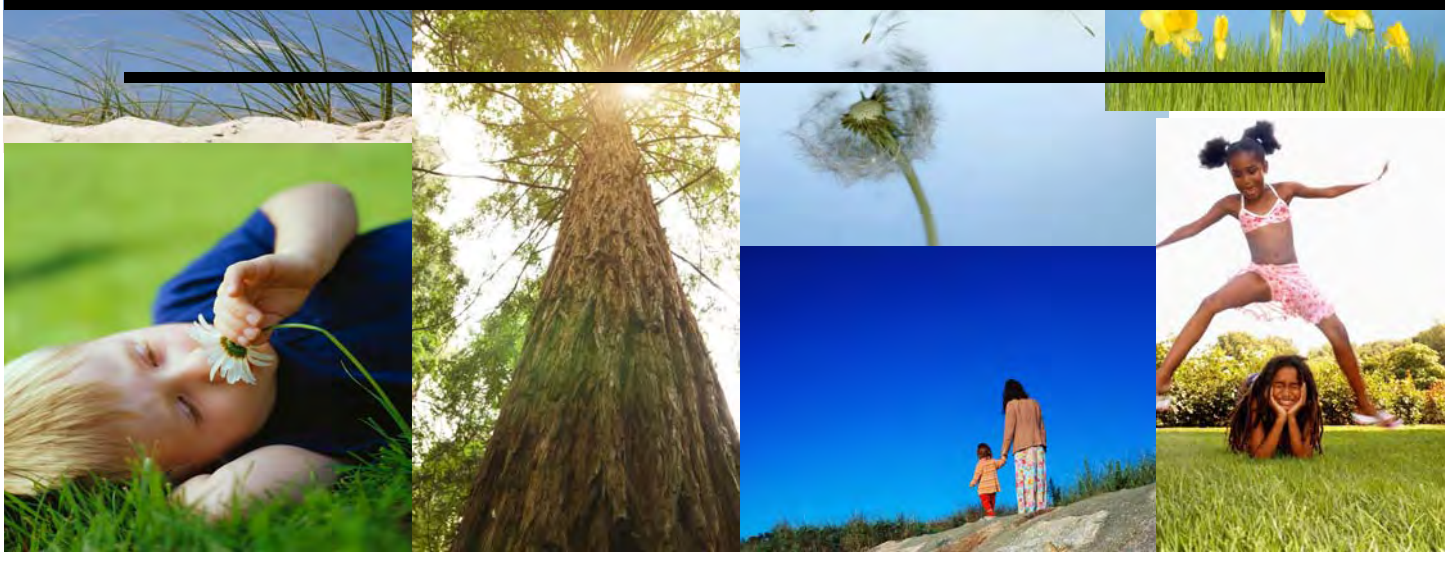
Maryland's Initiative to Connect Children to the Wonder of Nature

Led by

MARYLAND DEPARTMENT OF NATURAL RESOURCES

Vision Statement

Maryland's youth form deep and personal bonds with Nature; a result of abundant time spent playing outdoors, discovering the beauty, awe and wonderment of the Earth. This connection, which is strengthened by adult mentors, inspires and motivates children as stewards of the environment, and sustains and enriches their physical and mental well-being throughout their lives.



Executive Summary

Secretary John R. Griffin of the Maryland Department of Natural Resources (DNR) formed an internal Children and Nature Matrix Team in October 2007. The matrix team was charged with the development of a strategic plan for the DNR to evaluate and overcome the barriers between Maryland children and their emotional, physical and psychological connection with nature. The Children and Nature Matrix Team identified programmatic areas of concern and prioritized strategic elements that will support and inspire a cultural shift in how children relate to nature.

Five major areas of concern impacting the relationship of children to nature are:

1) The lack of access to natural areas for play and unstructured physical activity.
2) The lack of frequent contact with nature.
3) The lack of mentors and experiential opportunities for children to develop a love of nature and stewardship ethic.
4) The lack of awareness and exposure to nature in urban areas and areas with the least access to nature.
5) The lack of public awareness of issues that develop from the disconnect of children and nature.

Areas of concentrated effort to address these concerns include:

1) The establishment of new smart growth planning practices that will increase the access to natural play areas.
2) The revitalization and redirection of public land interpretive programs to focus on youth and family connection with nature.
3) The incorporation of outdoor experiential opportunities and service learning in Maryland public schools.
4) The partnering of city organizations and DNR to increase awareness of beneficial outdoor experiences and related resources for children with the least access to nature.
5) The creation of a statewide marketing campaign focused on inspiring a cultural shift to connect children to nature.

Initial key strategic plan outputs include:

1) The surveying of current and proposed Program Open Space developments for the inclusion of natural play areas and natural pathways on/and connecting to public lands.
2) The addition of a number of naturalists on public lands to redirect interpretive programming and provide a visible mentor presence.
3) The Maryland Department of Natural Resources in leading all Maryland public schools to participate in the Schoolyard Habitat and Maryland Green School programs.
4) The partnership with urban organizations, such as the Parks and People Foundation in Baltimore with the Maryland Park Service and the Maryland Conservation Corps, to increase the contact urban children may have with nature by incorporating field trips and service learning in state parks into their programs.
5) The development of a marketing campaign that includes a website, media public relations, the support of the First Lady of Maryland and a statewide launch event coordinated by the Department of Natural Resources Office of Communications.

Smart Growth

Places to play. Places to grow.

Increase access to parks and natural spaces

Natural Playgrounds

Paths to Parks Initiative

Local-State Lands Connections

Smart Growth

Natural Playgrounds

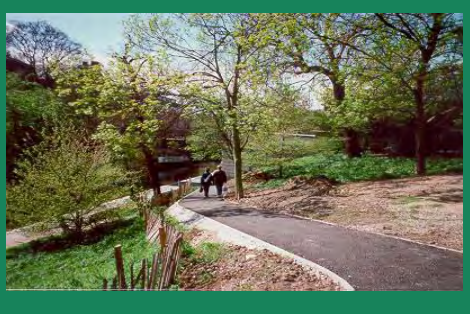
Create a Program Open Space (POS) incentive program with a dedicated appropriation for the improvement of natural play zones in the undeveloped pockets of local parks and urban and suburban neighborhoods.

Paths to Parks Initiative

Target the development of trail connections between schools, communities, and public lands. By creating safe routes from schools to public lands, children can access and frequent natural spaces more often. Paths from schools to parks will also encourage outdoor education and environmental clubs at connected schools.

Local-State Lands Connections

Form a partnership with the Maryland Recreation and Park Association (MRPA) "Get Active Maryland!" campaign to expand opportunities for youth to participate in nature-based recreation activities. Actions would address both programmatic and physical trail connections between local recreation agencies and state lands.



State Public Lands

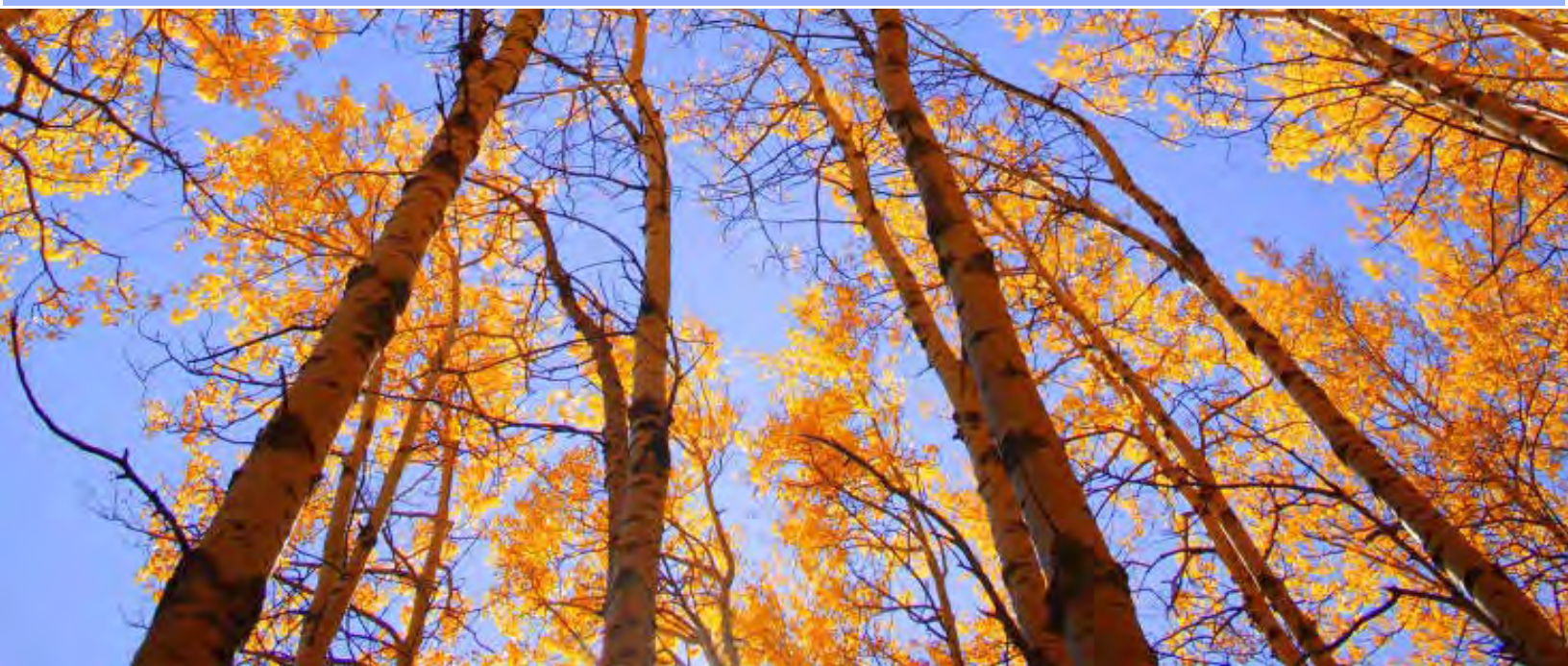
Providing nature to all of Maryland.

Revitalize & Redirect public land programs

Interpretive Activities

Outdoor Classrooms & Service Learning

Expanded Maryland Conservation Corps



State Public Lands

Interpretive Activities

New programs will be creatively developed to connect children with nature incorporating elements outside of traditional fact-based teaching. First steps include:
1) Redevelop nature centers to have a greater focus on youth.
2) Create a Master Naturalist program to support public lands that lack staff.
3) Increase the number of naturalists to lead interpretive activities for youth and families.

Outdoor Classrooms & Service Learning

Encourage youth-based organizations and school trips to state parks to participate in educational activities in the outdoors and perform engaging hands-on projects. First steps include:
1) Ensure service charges are not an impediment to access and are based on ability to pay.
2) Partner with MSDE to develop an outdoor classroom and discovery program for K-12.
3) Partner with MSDE to develop an outdoor service learning program.
4) Maryland Conservation Corps to offer support for implementation of outdoor classroom and service learning activities, as well as the production and maintenance of nature centers.

Expansion of Maryland Conservation Corps

Create the Civic Justice Corps through a partnership with the Department of Juvenile Services to recruit 100 14-16 year olds that have been court-involved to participate in a summer service program at Maryland State Parks. Civic Justice Corps members will earn an hourly wage while they serve on conservation projects throughout Maryland and engage in nature immersion experiences.

Create and outdoor classroom program that will provide 100 Baltimore city teens with a summer service opportunity at Maryland State Parks. Serving in crews of 10, these youth will serve on conservation projects and gain important experiences in nature to provide a foundation for future environmental stewardship.

Expand the AmeriCorps MCC Program to include new crews in Western Maryland and the Lower Eastern Shore.

Maryland Schools

A Natural Education

Increase access to nature in schools

Outdoor Classrooms & Discovery on public lands

Service Learning

Green Schoools

Schoolyard Habitat

Maryland Schools

Outdoor Classrooms & Discovery in State Parks

Working with the MSDE, we will create an outdoor classroom program that will align with voluntary state school curriculum standards as well as provide the beneficial experience of learning in natural settings. By working closely with schools, we can tailor programs for individual teacher curriculums to ensure more frequent student engagement with nature.

Service Learning

Maryland DNR will offer environmental service learning projects for students looking to complete required service hours for graduation. Sample Service Learning Projects:

1) Maryland Biological Stream Survey
2) Trail Maintenance and Monitoring
3) Forest Community Studies
4) BioBlitz Events
5) Ecological Studies in National Estuarine Research Reserves

Green Schools

Dramatically increase Green Schools program to integrate environmental best management practices and community stewardship in virtually all 1500 schools in Maryland.

Schoolyard Habitat

Dramatically increase Schoolyard Habitat program to convert asphalt and lawns to natural landscapes for virtually all 1500 schools in Maryland.

Potential funding partners:

1) Maryland Department of Transportation
2) US Federal Environmental Agencies
3) Chesapeake Bay Trust

Marketing & Public Outreach

No T.V. No walls. No problem.
Connecting Maryland's kids to nature.

Increase Public Awareness of the Benefits of Children in Nature

Governor No Child Left Inside Executive Order
"Great American Backyard Campout" Launch Event
First Lady "Green Hour" Campaign
Children & Nature Bay Game
Marketing Campaign
Special Events

Marketing & Public Outreach

Governor Children in Nature Executive Order

In April , to correspond with Earth Day Events across Maryland, Governor O'Malley will announce an Executive Order to form a Partnership for Children in Nature. The Partnership will be chaired by the Department of Natural Resources to implement the following:

1) Creation of an outdoor classroom program & Environmental Literacy Plan, with a focus on underserved youth.
2) Announcement of the Civic Justice Corps and Outdoor Discovery Corps.
3) Announcement of expanded Smart Growth initiatives.

"Great American Backyard Campout" Launch Event

The "Great American Backyard Campout" is part of a national campaign and coincides with the Governor's proclamation of June as Great Outdoors month. It will include:

1) The Governor and his family will camping out at a Maryland State Park and an invitation for all of Maryland to campout, whether in a park, backyard or other safe green space.
2) Events that are held on public lands throughout Maryland, with activities and information targeted to youth and their families.
3) The First Lady will announce her "Green Hour" Campaign.

First Lady "Green Hour" Campaign

First Lady announces a "Maryland Green Hour" initiative (NWF program) during the Great American Backyard Campout on June 28, which will involve an education and outreach campaign to educate parents about the value of nature play.

The First Lady, in association with NWF, will recommend that parents give their kids a "Green Hour" every day. One hour for:

1) Unstructured play and interaction in the natural world.
2) Creative problem solving, use of imagination and physical activity; all benefits of play outside.
3) Investigation and discovery in gardens, backyards, parks, or any place that is a safe and accessible green space.

Children & Nature Bay Game

Announce and launch the 2008 Bay Game with a children and nature theme. The focus will be around children connecting to nature with games and activities with outdoor components that will instruct children to use creativity and imagination to discover nature all around them.

Marketing Campaign

An informative, inspiring marketing campaign will launch a Children in Nature movement in Maryland that will start a cultural shift in the way children connect to nature.

A marketing campaign will include:

1) Website and online resource guide
2) Press Releases and other public relation announcements and events

Special Events

Appendix C

HR 3036 & S1981

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(Original Signature of Member)

111TH CONGRESS
1ST SESSION

H. R. _____

To amend the Elementary and Secondary Education Act of 1965 regarding environmental education, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

Mr. SARBANES introduced the following bill; which was referred to the Committee on _____

A BILL

To amend the Elementary and Secondary Education Act of 1965 regarding environmental education, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the ''No Child Left Inside Act of 2009''.

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

SEC. 2. FINDINGS.

The Congress makes the following findings:

(1) Environmental education is essential for—

(A) enhancing student learning and problem solving skills, especially in science;

(B) creating responsible and engaged citizens; and

(C) producing graduates who are prepared to address the challenges, adjustments, and opportunities that will be present in the life and the workforce of the 21st century due to threats to human health, economical development, biological diversity, and national security arising from environmental stresses.

(2) Studies documenting the increasing indicators of nature deficit show that time spent out of the classroom for learning during the school day is crit-

ical to the intellectual, emotional, and physical health of children and that providing students with quality opportunities to directly experience the natural world can improve students' overall readiness to learn and academic performance, as well as self-esteem, personal responsibility, community involvement, personal health (including child obesity issues), and understanding of nature.

(3) Fewer and fewer students are becoming involved in important environmental education courses, classwork, and field investigations as an unintended consequence of the No Child Left Behind Act of 2001.

(4) Hands-on, experience-based environmental education as part of the school curriculum connects children to the natural world, and research supports that time spent outdoors lessens the symptoms of Attention Deficit / Hyperactivity Disorder (ADHD), reduces stress and aggression, helps children sleep better, and improves physical health.

(5) Environmental education ''in the field'' as part of the regular school curriculum gets kids outside contributing to healthy lifestyles through outdoor recreation, exercise, play and experience in the

natural world that is critical to helping prevent obesity and address other related health problems.

(6) Environmental education for elementary and secondary school students is critical as our Nation transitions to a green economy where manufacturing workers, as well as architects, engineers, planners, scientists, business managers, financial experts, lawyers, entrepreneurs, political leaders, resource managers, and others, must be environmentally literate to succeed in a green economy.

(7) Environmental education provides critical tools for a 21st century workforce by providing students with the skills to understand complex environmental issues so they may make informed decisions in their own lives and find solutions for real world challenges facing us as a nation. Business leaders also increasingly believe that an environmentally literate workforce is critical to their long-term success. Environmental education helps prepare students for real world challenges.

SEC. 3. REFERENCES.

Except as otherwise specifically provided, whenever in this Act an amendment or repeal is expressed in terms of an amendment to, or a repeal of, a section or other provision, the reference shall be considered to be made to

a section or other provision of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6301 et seq.).

SEC. 4. AUTHORIZATION OF APPROPRIATIONS.

(a) AUTHORIZATION.—There is authorized to be appropriated to carry out section 5622(g) and part E of title II of the Elementary and Secondary Education Act of 1965, $100,000,000 for fiscal year 2010 and each of the 4 succeeding fiscal years.

(b) DISTRIBUTION.—With respect to any amount appropriated under subsection (a) for a fiscal year—

(1) not more than 70 percent of such amount shall be used to carry out section 5622(g) of the Elementary and Secondary Education Act of 1965 for such fiscal year; and

(2) not less than 30 percent of such amount shall be used to carry out part E of title II of such Act for such fiscal year.

TITLE I—ENVIRONMENTAL LITERACY PLANS

SEC. 101. DEVELOPMENT, APPROVAL, AND IMPLEMENTATION OF STATE ENVIRONMENTAL LITERACY PLANS.

Part D of title V (20 U.S.C. 7201 et seq.) is amended by adding at the end the following:

"Subpart 22—Environmental Literacy Plans

"SEC. 5621. ENVIRONMENTAL LITERACY PLAN REQUIREMENTS.

''In order for any State educational agency, or a local educational agency served by a State educational agency, to receive grant funds, either directly or through participation in a partnership with a recipient of grant funds, under this subpart or part E of title II, the State educational agency shall meet the requirements regarding an environmental literacy plan under section 5622.

"SEC. 5622. STATE ENVIRONMENTAL LITERACY PLANS.

''(a) SUBMISSION OF PLAN.—

''(1) IN GENERAL.—Not later than 1 year after the date of enactment of the No Child Left Inside Act of 2009, a State educational agency subject to the requirements of section 5621 shall, in consultation with State environmental agencies and State natural resource agencies, and with input from the public—

''(A) submit an environmental literacy plan for prekindergarten through grade 12 to the Secretary for peer review and approval that will ensure that elementary and secondary school students in the State are environmentally literate; and

''(B) begin the implementation of such plan in the State.

''(2) EXISTING PLANS.—A State may satisfy the requirement of paragraph (1)(A) by submitting to the Secretary for peer review an existing State plan that has been developed in cooperation with a State environmental or natural resource management agency, if such plan complies with this section.

''(b) PLAN OBJECTIVES.—A State environmental literacy plan shall meet the following objectives:

''(1) Prepare students to understand, analyze, and address the major environmental challenges facing the students' State and the United States.

''(2) Provide field experiences as part of the regular school curriculum and create programs that contribute to healthy lifestyles through outdoor recreation and sound nutrition.

''(3) Create opportunities for enhanced and ongoing professional development for teachers that improves the teachers'—

''(A) environmental subject matter knowledge; and

''(B) pedagogical skills in teaching about environmental issues, including the use of—

''(i) interdisciplinary, field-based, and research-based learning; and

''(ii) innovative technology in the classroom.

''(c) CONTENTS OF PLAN.—A State environmental literacy plan shall include each of the following:

''(1) A description of how the State educational agency will measure the environmental literacy of students, including—

''(A) relevant State academic content standards and content areas regarding environmental education, and courses or subjects where environmental education instruction will be integrated throughout the prekindergarten to grade 12 curriculum; and

''(B) a description of the relationship of the plan to the secondary school graduation requirements of the State.

''(2) A description of programs for professional development for teachers to improve the teachers'—

''(A) environmental subject matter knowledge; and

''(B) pedagogical skills in teaching about environmental issues, including the use of —

''(i) interdisciplinary, field-based, and research-based learning; and

''(ii) innovative technology in the classroom.

''(3) A description of how the State educational agency will implement the plan, including securing funding and other necessary support.

''(d) PLAN UPDATE.—The State environmental literacy plan shall be revised or updated by the State educational agency and submitted to the Secretary not less often than every 5 years or as appropriate to reflect plan modifications.

''(e) PEER REVIEW AND SECRETARIAL APPROVAL.—The Secretary shall—

''(1) establish a peer review process to assist in the review of State environmental literacy plans;

''(2) appoint individuals to the peer review process who—

''(A) are representative of parents, teachers, State educational agencies, State environmental agencies, State natural resource agencies, local educational agencies, and nongovernmental organizations; and

''(B) are familiar with national environmental issues and the health and educational needs of students;

''(3) include, in the peer review process, appropriate representatives from the Department of Commerce, Department of Interior, Department of Energy, the Environmental Protection Agency, and other appropriate Federal agencies, to provide environmental expertise and background for evaluation of the State environmental literacy plan;

''(4) approve a State environmental literacy plan not later than 120 days after the plan's submission unless the Secretary determines that the State environmental literacy plan does not meet the requirements of this section;

''(5) immediately notify the State if the Secretary determines that the State environmental literacy plan does not meet the requirements of this section, and state the reasons for such determination;

''(6) not decline to approve a State environmental literacy plan before—

''(A) offering the State an opportunity to revise the State environmental literacy plan;

''(B) providing technical assistance in order to assist the State to meet the requirements of this section; and

''(C) providing notice and an opportunity for a hearing; and

''(7) have the authority to decline to approve a State environmental literacy plan for not meeting the requirements of this part, but shall not have the authority to require a State, as a condition of approval of the State environmental literacy plan, to—

''(A) include in, or delete from, such State environmental literacy plan 1 or more specific elements of the State academic content standards under section 1111(b)(1); or

''(B) use specific academic assessment instruments or items.

''(f) STATE REVISIONS.—The State educational agency shall have the opportunity to revise a State environmental literacy plan if such revision is necessary to satisfy the requirements of this section.

''(g) GRANTS FOR IMPLEMENTATION.—

''(1) PROGRAM AUTHORIZED.—From amounts appropriated for this subsection, the Secretary shall award grants, through allotments in accordance with the regulations described in paragraph (2), to States

to enable the States to award subgrants, on a competitive basis, to local educational agencies and eligible partnerships (as such term is defined in section 2502) to support the implementation of the State environmental literacy plan.

''(2) REGULATIONS.—The Secretary shall promulgate regulations implementing the grant program under paragraph (1), which regulations shall include the development of an allotment formula that best achieves the purposes of this subpart.

''(3) ADMINISTRATIVE EXPENSES.—A State receiving a grant under this subsection may use not more than 2.5 percent of the grant funds for administrative expenses.

''(h) REPORTING.—

''(1) IN GENERAL.—Not later than 2 years after approval of a State environmental literacy plan, and every 2 years thereafter, the State educational agency shall submit to the Secretary a report on the implementation of the State plan.

''(2) REPORT REQUIREMENTS.—The report required by this subsection shall be—

''(A) in the form specified by the Secretary;

''(B) based on the State's ongoing evaluation activities; and

''(C) made readily available to the public.''.

TITLE II—ESTABLISHMENT OF ENVIRONMENTAL EDUCATION PROFESSIONAL DEVELOPMENT GRANT PROGRAMS

SEC. 201. ENVIRONMENTAL EDUCATION PROFESSIONAL DEVELOPMENT GRANT PROGRAMS.

Title II (20 U.S.C. 6601 et seq.) is amended by adding at the end the following:

''PART E—ENVIRONMENTAL EDUCATION PROFESSIONAL DEVELOPMENT GRANT PROGRAMS

''SEC. 2501. PURPOSE.

''The purpose of this part is to ensure the academic achievement of students in environmental literacy through the professional development of teachers and educators.

''SEC. 2502. GRANTS FOR ENHANCING EDUCATION THROUGH ENVIRONMENTAL EDUCATION.

''(a) DEFINITION OF ELIGIBLE PARTNERSHIP.—In this section, the term 'eligible partnership' means a partnership that—

''(1) shall include a local educational agency; and

''(2) may include—

''(A) the teacher training department of an institution of higher education;

''(B) the environmental department of an institution of higher education;

''(C) another local educational agency, a public charter school, a public elementary school or secondary school, or a consortium of such schools;

''(D) a Federal, State, regional, or local environmental or natural resource management agency that has demonstrated effectiveness in improving the quality of environmental education teachers; or

''(E) a nonprofit organization that has demonstrated effectiveness in improving the quality of environmental education teachers.

''(b) GRANTS AUTHORIZED.—

''(1) PROGRAM AUTHORIZED.—From amounts appropriated for this subsection, the Secretary shall award grants, through allotments in accordance with the regulations described in paragraph (2), to States whose State environmental literacy plan has been

approved under section 5622, to enable the States to award subgrants under subsection (c).

''(2) REGULATIONS.—The Secretary shall promulgate regulations implementing the grant program under paragraph (1), which regulations shall include the development of an allotment formula that best achieves the purposes of this subpart.

''(3) ADMINISTRATIVE EXPENSES.—A State receiving a grant under this subsection may use not more than 2.5 percent of the grant funds for administrative expenses.

''(c) SUBGRANTS AUTHORIZED.—

''(1) SUBGRANTS TO ELIGIBLE PARTNERSHIPS.—From amounts made available to a State educational agency under subsection (b)(1), the State educational agency shall award subgrants, on a competitive basis, to eligible partnerships serving the State, to enable the eligible partnerships to carry out the authorized activities described in subsection (e) consistent with the approved State environmental literacy plan.

''(2) DURATION.—The State educational agency shall award each subgrant under this part for a period of not more than 3 years beginning on the date

of approval of the State's environmental literacy plan under section 5622.

''(3) SUPPLEMENT, NOT SUPPLANT.—Funds provided to an eligible partnership under this part shall be used to supplement, and not supplant, funds that would otherwise be used for activities authorized under this part.

''(d) APPLICATION REQUIREMENTS.—

''(1) IN GENERAL.—Each eligible partnership desiring a subgrant under this part shall submit an application to the State educational agency, at such time, in such manner, and accompanied by such information as the State educational agency may require.

''(2) CONTENTS.—Each application submitted under paragraph (1) shall include—

''(A) the results of a comprehensive assessment of the teacher quality and professional development needs, with respect to the teaching and learning of environmental content;

''(B) an explanation of how the activities to be carried out by the eligible partnership are expected to improve student academic achievement and strengthen the quality of environmental instruction;

''(C) a description of how the activities to be carried out by the eligible partnership—

''(i) will be aligned with challenging State academic content standards and student academic achievement standards in environmental education, to the extent such standards exist, and with the State's environmental literacy plan under section 5622; and

''(ii) will advance the teaching of interdisciplinary courses that integrate the study of natural, social, and economic systems and that include strong field components in which students have the opportunity to directly experience nature;

''(D) a description of how the activities to be carried out by the eligible partnership will ensure that teachers are trained in the use of field-based or service learning to enable the teachers—

''(i) to use the local environment and community as a resource; and

''(ii) to enhance student understanding of the environment and academic achievement;

''(E) a description of—

''(i) how the eligible partnership will carry out the authorized activities described in subsection (e); and

''(ii) the eligible partnership's evaluation and accountability plan described in subsection (f); and

''(F) a description of how the eligible partnership will continue the activities funded under this part after the grant period has expired.

''(e) AUTHORIZED ACTIVITIES.—An eligible partnership shall use the subgrant funds provided under this part for 1 or more of the following activities related to elementary schools or secondary schools:

''(1) Creating opportunities for enhanced and ongoing professional development of teachers that improves the environmental subject matter knowledge of such teachers.

''(2) Creating opportunities for enhanced and ongoing professional development of teachers that improves teachers' pedagogical skills in teaching about the environment and environmental issues, including in the use of—

''(A) interdisciplinary, research-based, and field-based learning; and

''(B) innovative technology in the classroom.

''(3) Establishing and operating environmental education summer workshops or institutes, including follow-up training, for elementary and secondary school teachers to improve their pedagogical skills and subject matter knowledge for the teaching of environmental education.

''(4) Developing or redesigning more rigorous environmental education curricula that—

''(A) are aligned with challenging State academic content standards in environmental education, to the extent such standards exist, and with the State environmental literacy plan under section 5622; and

''(B) advance the teaching of interdisciplinary courses that integrate the study of natural, social, and economic systems and that include strong field components.

''(5) Designing programs to prepare teachers at a school to provide mentoring and professional development to other teachers at such school to improve teacher environmental education subject matter and pedagogical skills;

''(6) Establishing and operating programs to bring teachers into contact with working professionals in environmental fields to expand such teachers' subject matter knowledge of, and research in, environmental issues.

''(7) Creating initiatives that seek to incorporate environmental education within teacher training programs or accreditation standards consistent with the State environmental literacy plan under section 5622.

''(8) Promoting outdoor environmental education activities as part of the regular school curriculum and schedule in order to further the knowledge and professional development of teachers and help students directly experience nature.

''(f) EVALUATION AND ACCOUNTABILITY PLAN.—

''(1) IN GENERAL.—Each eligible partnership receiving a subgrant under this part shall develop an evaluation and accountability plan for activities assisted under this part that includes rigorous objectives that measure the impact of the activities.

''(2) CONTENTS.—The plan developed under paragraph (1) shall include measurable objectives to increase the number of teachers who participate in

environmental education content-based professional development activities.

''(g) REPORT.—Each eligible partnership receiving a subgrant under this part shall report annually, for each year of the subgrant, to the State educational agency regarding the eligible partnership's progress in meeting the objectives described in the accountability plan of the eligible partnership under subsection (f).''.

TITLE III—ENVIRONMENTAL EDUCATION GRANT PROGRAM TO HELP BUILD NATIONAL CAPACITY

SEC. 301. ENVIRONMENTAL EDUCATION GRANT PROGRAM TO HELP BUILD NATIONAL CAPACITY.

Part D of title V (20 U.S.C. 7201 et seq.) (as amended by section 101) is further amended by adding at the end the following:

"Subpart 23—Environmental Education Grant Program

"SEC. 5631. PURPOSES.

''The purposes of this subpart are—

''(1) to prepare children to understand and address major environmental challenges facing the United States; and

''(2) to strengthen environmental education as an integral part of the elementary school and secondary school curriculum.

"SEC. 5632. GRANT PROGRAM AUTHORIZED.

''(a) DEFINITION OF ELIGIBLE PARTNERSHIP.—In this section, the term 'eligible partnership' means a partnership that—

''(1) shall include a local educational agency; and

''(2) may include—

''(A) the teacher training department of an institution of higher education;

''(B) the environmental department of an institution of higher education;

''(C) another local educational agency, a public charter school, a public elementary school or secondary school, or a consortium of such schools;

''(D) a Federal, State, regional, or local environmental or natural resource management agency, or park and recreation department, that has demonstrated effectiveness, expertise, and experience in the development of the institutional, financial, intellectual, or policy resources needed to help the field of environ-

mental education become more effective and widely practiced; and

''(E) a nonprofit organization that has demonstrated effectiveness, expertise, and experience in the development of the institutional, financial, intellectual, or policy resources needed to help the field of environmental education become more effective and widely practiced.

''(b) GRANTS AUTHORIZED.—

''(1) IN GENERAL.—The Secretary is authorized to award grants, on a competitive basis, to eligible partnerships to enable the eligible partnerships to pay the Federal share of the costs of activities under this subpart.

''(2) DURATION.—Each grant under this subpart shall be for a period of not less than 1 year and not more than 3 years.

''SEC. 5633. APPLICATIONS.

''Each eligible partnership desiring a grant under this subpart shall submit to the Secretary an application that contains—

''(1) a plan to initiate, expand, or improve environmental education programs in order to make progress toward meeting—

''(A) challenging State academic content standards and student academic achievement standards in environmental education, to the extent such standards exist; and

''(B) academic standards that are aligned with the State's environmental literacy plan under section 5622; and

''(2) an evaluation and accountability plan for activities assisted under this subpart that includes rigorous objectives that measure the impact of activities funded under this subpart.

''SEC. 5634. USE OF FUNDS.

''Grant funds made available under this subpart shall be used for 1 or more of the following:

''(1) Developing and implementing State curriculum frameworks for environmental education that meet—

''(A) challenging State academic content standards and student academic achievement standards for environmental education, to the extent such standards exist; and

''(B) academic standards that are aligned with the State's environmental literacy plan under section 5622.

''(2) Replicating or disseminating information about proven and tested model environmental education programs that—

''(A) use the environment as an integrating theme or content throughout the curriculum; or

''(B) provide integrated, interdisciplinary instruction about natural, social, and economic systems along with field experience that provides students with opportunities to directly experience nature in ways designed to improve students' overall academic performance, personal health (including addressing child obesity issues), and understanding of nature.

''(3) Developing and implementing new policy approaches to advancing environmental education at the State and national level.

''(4) Conducting studies of national significance that—

''(A) provide a comprehensive, systematic, and formal assessment of the state of environmental education in the United States;

''(B) evaluate the effectiveness of teaching environmental education as a separate subject, and as an integrating concept or theme; or

''(C) evaluate the effectiveness of using environmental education-based field-based learning, service learning or outdoor experiential learning in helping improve—

''(i) student academic achievement in mathematics, reading or language arts, science, or other core academic subjects;

''(ii) student behavior;

''(iii) student attendance; and

''(iv) secondary school graduation rates.

''(5) Executing projects that advance widespread State and local educational agency adoption and use of environmental education content standards.

''SEC. 5635. REPORTS.

''(a) ELIGIBLE PARTNERSHIP REPORT.—In order to continue receiving grant funds under this subpart after the first year of a multiyear grant under this subpart, the eligible partnership shall submit to the Secretary an annual report that—

''(1) describes the activities assisted under this subpart that were conducted during the preceding year;

''(2) demonstrates that progress has been made in helping schools to meet the State academic standards for environmental education described in section 5634(1); and

''(3) describes the results of the eligible partnership's evaluation and accountability plan.

''(b) REPORT TO CONGRESS.—Not later than 2 years after the date of enactment of the No Child Left Inside Act of 2009 and annually thereafter, the Secretary shall submit a report to Congress that—

''(1) describes the programs assisted under this subpart;

''(2) documents the success of such programs in improving national and State environmental education capacity; and

''(3) makes such recommendations as the Secretary determines appropriate for the continuation and improvement of the programs assisted under this subpart.

''SEC. 5636. ADMINISTRATIVE PROVISIONS.

''(a) FEDERAL SHARE.—The Federal share of a grant under this subpart shall not exceed—

''(1) 90 percent of the total costs of the activities assisted under the grant for the first year for

which the program receives assistance under this subpart; and

''(2) 75 percent of such costs for each of the second and third years.

''(b) ADMINISTRATIVE EXPENSES.—Not more than 7.5 percent of the grant funds made available to an eligible partnership under this subpart for any fiscal year may be used for administrative expenses.

''(c) AVAILABILITY OF FUNDS.—Amounts made available to the Secretary to carry out this subpart shall remain available until expended.

''SEC. 5637. SUPPLEMENT, NOT SUPPLANT.

''Funds made available under this subpart shall be used to supplement, and not supplant, any other Federal, State, or local funds available for environmental education activities.''.

.....

(Original Signature of Member)

110TH CONGRESS
1ST SESSION

H. R. _____

To amend the Elementary and Secondary Education Act of 1965 regarding environmental education, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

Mr. SARBANES introduced the following bill; which was referred to the Committee on _____

A BILL

To amend the Elementary and Secondary Education Act of 1965 regarding environmental education, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; TABLE OF CONTENTS.

(a) SHORT TITLE.—This Act may be cited as the "No Child Left Inside Act of 2007".

(b) TABLE OF CONTENTS.—The table of contents for this Act is as follows:

SEC. 2. FINDINGS.

The Congress makes the following findings:

(1) Environmental education is essential for—

(A) enhancing student learning and problem solving skills, especially in science;

(B) creating responsible and engaged citizens; and

(C) producing graduates who are prepared to address the challenges, adjustments, and opportunities that will be present in the life and the workforce of the 21st century due to threats to human health, economical development, bio-

logical diversity, and national security arising from environmental stresses.

(2) Studies documenting the increasing indicators of nature-deficit disorder show that time spent out of the classroom for learning during the school day is critical to the intellectual, emotional, and physical health of children and that providing students with quality opportunities to directly experience the natural world can improve students' overall academic performance, self-esteem, personal responsibility, community involvement, personal health (including child obesity issues), and understanding of nature.

(3) Fewer and fewer students are becoming involved in important environmental education courses, classwork, and field investigations as an unintended consequence of the No Child Left Behind Act of 2001 (20 U.S.C. 6301 et seq.).

SEC. 3. REFERENCES.

Except as otherwise specifically provided, whenever in this Act an amendment or repeal is expressed in terms of an amendment to, or a repeal of, a section or other provision, the reference shall be considered to be made to a section or other provision of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6301 et seq.).

TITLE I—ENVIRONMENTAL LITERACY PLANS

SEC. 101. STATE USES OF FUNDS.

Title II of the Elementary and Secondary Education Act of 1965 (20 U.S.C. 6601 et seq.) is amended by adding at the end the following:

"PART E—ENVIRONMENTAL LITERACY PLANS

"SEC. 2501. STATE USES OF FUNDS.

"A State educational agency may use funds made available for State use for support for the development of the State Environmental Literacy Plan as described in section 2503.

"SEC. 2502. STATE APPLICATIONS.

"Any State that desires to receive assistance under sections 2601 through 2603, or sections 5621 through 5627, shall submit to the Secretary an application that includes the submission, reporting and implementation requirements relating to the State Environmental Literacy Plan as set forth in section 2503.

"SEC. 2503. STATE PLANS TO ENSURE THAT STUDENTS ARE ENVIRONMENTALLY LITERATE.

"(a) SUBMISSION OF PLAN.—Not later than 1 year after the date of the enactment of this section, State educational agencies, in consultation with State natural resource agencies and with input from the public, shall sub-

mit a K–12 plan to the United States Department of Education for peer review and approval that will ensure that high school graduates are environmentally literate. States may satisfy this requirement by submitting for peer review existing State plans that have been developed by or in cooperation with State environmental organizations provided they are in compliance with subsection (b) and (c).

"(b) PLAN OBJECTIVES.—The objectives of the State Environmental Literacy Plans are as follows:

"(1) Prepare children to understand and address the major environmental challenges facing the United States, such as the relationship of the environment to national security, clean energy, climate change, health risks, and natural disaster resilience.

"(2) Reduce the risk of nature-deficit disorder in students by restoring and increasing field experiences as part of the regular school curriculum and create programs that contribute to healthy life styles through outdoor recreation and sound nutrition.

"(3) Create opportunities for enhanced and ongoing professional development of teachers that improves the environmental content knowledge, skill in teaching about environmental issues, and field-based pedagogical skill base of teachers.

"(c) CONTENTS OF PLAN.—The plan shall include each of the following:

"(1) Relevant content standards, content areas, and courses or subjects where instruction will take place

"(2) A description of the relationship of the plan to State graduation requirements.

"(3) A description of how the State education agency will measure the environmental literacy of students.

"(4) A description of programs for professional development of teachers to improve their environmental content knowledge, skill in teaching about environmental issues, and field-based pedagogical skills.

"(5) A description of how the State education agency will implement the plan, including securing funding and other necessary support.

"(d) PLAN UPDATE.—The State plan shall be revised or updated by the State education agency and submitted to the Secretary at least every 5 years or as appropriate to reflect plan modifications.

"(e) PEER REVIEW AND SECRETARIAL APPROVAL.—The Secretary shall—

"(1) establish a peer-review process to assist in the review of State plans;

"(2) appoint individuals to the peer-review process who are representative of parents, teachers, State educational and environmental agencies, local educational agencies, and non-governmental organizations, and who are familiar with national environmental issues and the health and educational needs of students;

"(3) approve a State plan within 120 days of its submission unless the Secretary determines that the plan does not meet the requirements of this section;

"(4) immediately notify the State if the Secretary determines that the State plan does not meet the requirements of this Section of such determination and the reasons for such determination;

"(5) not decline to approve a State's plan before—

"(A) offering the State an opportunity to revise its plan;

"(B) providing technical assistance in order to assist the State to meet the requirements of section 5123(c); and

"(C) providing a hearing;

"(6) have the authority to disapprove a State plan for not meeting the requirements of this part, but shall not have the authority to require a State, as a condition of approval of the State plan, to include in, or delete from, such plan one or more specific elements of the State's academic content standards or to use specific academic assessment instruments or items.

"(f) STATE REVISIONS.—A State plan shall be revised by the State educational agency if it is necessary to satisfy the requirements of this section.

"(g) REPORTING.—

"(1) IN GENERAL.—2 years after approval of its plan and every 2 years thereafter, the chief executive officer of the State, in cooperation with the State educational agency, shall submit to the Secretary a report on the implementation of the State plan.

"(2) SPECIAL RULE.—The report required by this subsection shall be—

"(A) in the form specified by the Secretary;

"(B) based on the State's ongoing evaluation activities; and

"(C) made readily available to the public.

"(h) PENALTIES.—

"(1) If a State fails to meet any of the requirements of this section, the Secretary may withhold all funds for State administration under sections 2601 through 2603, and sections 5621 through 5627, until the Secretary determines that the State has fulfilled those requirements.

"(2) If a State fails to implement the State plan, the Secretary may withhold all funds for State administration under sections 2601 through 2603, and sections 5621 through 5627, until the Secretary determines that the State is fully implementing the State plan.".

TITLE II—ESTABLISHMENT OF ENVIRONMENTAL EDUCATION GRANT PROGRAMS AND PRIORITY FUNDING FOR LOCAL EDUCATIONAL AGENCIES OFFERING ENVIRONMENTAL MAGNET SCHOOLS

SEC. 201. ENVIRONMENTAL EDUCATION GRANT PROGRAM FOR TEACHER TRAINING.

Title II of the elementary and Secondary Education Act of 1965, as amended by title I, is further amended by adding at the end the following:

"PART F—ENVIRONMENTAL EDUCATION GRANTS

"SEC. 2601. PURPOSE.

"(a) PURPOSE.—The purpose of this part is to ensure the academic achievement of students in environmental learning by—

"(1) encouraging institutions of higher education to promote the status and stature of the environmental education teaching profession by assuming greater responsibility for improving environmental education teacher training through the establishment of a comprehensive, integrated system of recruiting, training, and advising environmental education teachers; and

"(2) encouraging State educational agencies, local educational agencies, elementary schools, and secondary schools to participate in programs that—

"(A) improve the environmental content knowledge, skills in teaching about environmental issues, and field-based pedagogical skill base of all teachers;

"(B) focus on the development of teacher's environmental knowledge and teaching skills as a career-long process that continuously stimulates teachers' intellectual growth and upgrades

teachers' proficiency in teaching about the environment;

"(C) develop more rigorous environmental education teacher training curricula that are aligned with challenging State and local academic content standards; or

"(D) provide environmental education experiences that utilize outdoor activities and facilities for students to directly experience nature.

"SEC. 2602. GRANTS FOR ENHANCING EDUCATION THROUGH ENVIRONMENTAL EDUCATION.

"(a) ELIGIBLE PARTNERSHIP DEFINED.—In this section, the term 'eligible partnership' means a partnership that—

"(1) shall include a local educational agency; and

"(2) may include—

"(A) teacher training department of an institution of higher education;

"(B) environmental department of an institution of higher education;

"(C) another local educational agency, a public charter school, a public or private ele-

mentary school or secondary school, or a consortium of such schools;

"(D) a business; or

"(E) a nonprofit or for-profit organization of demonstrated effectiveness in improving the quality of environmental education teachers, such as through outdoor environmental education experiences.

"(b) GRANTS AUTHORIZED.—

"(1) GRANTS TO ELIGIBLE PARTNERSHIPS.—The Secretary is authorized to award grants, on a competitive basis, to eligible partnerships to enable the eligible partnerships to carry out the authorized activities described in subsection (d).

"(2) DURATION.—The Secretary shall award each grant under this part for a period of 3 years.

"(3) SUPPLEMENT, NOT SUPPLANT.—Funds received under this part shall be used to supplement, and not supplant, funds that would otherwise be used for activities authorized under this part.

"(c) APPLICATION REQUIREMENTS.—

"(1) IN GENERAL.—Each eligible partnership desiring a grant under this part shall submit an application, at such time, in such manner, and accom-

panied by such information as the State educational agency may require.

"(2) CONTENTS.—Each application submitted pursuant to paragraph (1) shall include—

"(A) the results of a comprehensive assessment of the teacher quality and professional development needs, with respect to the teaching and learning of environmental content;

"(B) a description of how the activities to be carried out by the eligible partnership—

"(i) will be aligned with challenging State academic content and student academic achievement standards in environmental education; and

"(ii) will advance the teaching of interdisciplinary courses that integrate the study of natural, social, and economic systems and that include strong field components in which students have the opportunity to directly experience nature;

"(C) an explanation of how the activities to be carried out by the eligible partnership are expected to improve student academic achievement and strengthen the quality of environmental instruction;

"(D) a description of how the activities to be carried out by the eligible partnership will ensure that teachers are trained in the use of field-based, place-based, and service learning to enable the teachers to use the local environment and community as a resource, to enhance student understanding, the relevance of instruction, and academic achievement;

"(E) a description of—

"(i) how the eligible partnership will carry out the authorized activities described in subsection (d); and

"(ii) the eligible partnership's evaluation and accountability plan described in subsection (f); and

"(F) a description of how the eligible partnership will continue the activities funded under this part after the grant period has expired.

"(d) AUTHORIZED ACTIVITIES.—An eligible partnership shall use the grant funds provided under this part for 1 or more of the following activities related to elementary schools or secondary schools:

"(1) Creating opportunities for enhanced and ongoing environmental education professional devel-

opment of teachers that improves the environmental knowledge of such teachers.

"(2) Promoting skills for teaching about the environment and environmental issues, including integrating reliable scientifically based research teaching methods and technology-based teaching methods into the curriculum.

"(3) Establishing and operating environmental education summer workshops or institutes, including follow-up training, for elementary school and secondary school environmental education teachers.

"(4) Developing or redesigning more rigorous environmental education curricula that—

"(A) are aligned with challenging State and local academic content standards; and

"(B) advance the teaching of interdisciplinary courses that integrate the study of natural, social, and economic systems and that include strong field components.

"(5) Establishing environmental education distance learning programs for teachers using curricula that are innovative, content-based, and based on scientifically based research that is current as of the date of the program involved.

"(6) Designing programs to prepare teachers at a school to provide environmental education professional development to other teachers at the school and to assist beginning and other teachers at the school, including (if applicable) a mechanism to integrate the teacher's experiences from a summer workshop or institute into the provision of professional development and assistance.

"(7) Establishing and operating programs to bring teachers into contact with working professionals in environmental fields to expand such teachers' subject matter knowledge of and research in environmental issues.

"(8) Designing programs to identify and develop exemplary environmental education teachers in the kindergarten through grade 12 classrooms.

"(9) Training environmental education teachers and developing programs to encourage underrepresented individuals in environmental careers to pursue postsecondary degrees in majors leading to such careers.

"(10) Initiatives that seek to incorporate environmental education within teacher training program accreditation standards.

"(11) Promoting outdoor environmental education activities as part of the regular school curriculum and schedule in order to further the knowledge and development of teachers and students.

"(e) COORDINATION AND CONSULTATION.—Grant recipients shall coordinate the use of such grant funds with any related activities carried out with funds made available under this part.

"(f) EVALUATION AND ACCOUNTABILITY PLAN.—

"(1) IN GENERAL.—Each eligible partnership receiving a grant under this part shall develop an evaluation and accountability plan for activities assisted under this part that includes rigorous objectives that measure the impact of activities funded under this part.

"(2) CONTENTS.—The plan developed pursuant to paragraph (1) shall include measurable objectives to increase the number of teachers who participate in environmental education content-based professional development activities.

"(g) REPORT.—Each eligible partnership receiving a grant under this part shall report annually to the Secretary regarding the eligible partnership's progress in meeting the objectives described in the accountability plan of the eligible partnership under subsection (f).

"SEC. 2603. AUTHORIZATIONS AND APPROPRIATIONS.

"There are authorized to be appropriated to carry out this part $100,000,000 for fiscal year 2008 and each of the 4 succeeding fiscal years.".

SEC. 202. ENVIRONMENTAL EDUCATION GRANT PROGRAM TO HELP BUILD NATIONAL CAPACITY.

Part D of title V (20 U.S.C. 7241 et seq.) is amended by adding at the end the following:

"SUBPART 22—ENVIRONMENTAL EDUCATION GRANT PROGRAM

"SEC. 5621. PURPOSE.

"The purposes of this subpart are as follows:

"(1) To responsibly prepare children to understand and address major challenges facing the United States, such as clean energy, climate change, environmental health risks, and natural disaster resilience.

"(2) To support systemic education reform by strengthening environmental education as an integral part of the elementary school and secondary school curriculum.

"(3) To help ensure that all students meet challenging State academic content and student academic achievement standards in environmental learning.

"(4) To support the national effort to enable all students to demonstrate competence in environmental learning.

"(5) To leverage and expand private and public support for environmental education partnerships at national, State, and local levels.

"(6) To award grants to initiate, expand, or improve environmental education programs for all kindergarten through 12th grade students.

"(7) To reduce the risk of nature-deficit disorder in students by restoring and increasing field experiences as part of the regular school curriculum and schedule in order to improve students' overall academic performance, self-esteem, personal responsibility, community involvement, personal health (including addressing child obesity issues), and understanding of nature.

"SEC. 5622. GRANT PROGRAM AUTHORIZED.

"(a) GRANTS AUTHORIZED.—

"(1) IN GENERAL.—The Secretary is authorized to award grants, on a competitive basis, to nonprofit organizations, State educational agencies, local educational agencies, or institutions of higher education that have demonstrated expertise and experience in the development of the institutional, financial, intel-

lectual, or policy resources needed to help the field of environmental education become more effective and widely practiced.

"(2) DURATION.—The Secretary shall award each grant under this subpart for a period of not less than 1 year and not more than 3 years.

"SEC. 5623. USE OF FUNDS.

"Grant funds made available under this subpart shall be used for 1 or more of the following:

"(1) Developing and implementing challenging State environmental education academic content standards, student academic achievement standards, and State curriculum frameworks.

"(2) Replicating or disseminating information about proven and tested model environmental education programs that—

"(A) use the environment as an integrating theme or content throughout the curriculum; or

"(B) provide integrated, interdisciplinary instruction about natural, social, and economic systems along with field experience that provides students with opportunities to directly experience nature in ways designed to improve overall academic performance, self-esteem, personal responsibility, community involvement,

personal health (including addressing child obesity issues), or their understanding of nature.

"(3) Developing and implementing new policy approaches to advancing environmental education at the State and national level.

"(4) Conducting studies of national significance that—

"(A) provide a baseline national assessment of the environmental literacy of America's students;

"(B) provide a comprehensive, systematic, and formal assessment of the State of environmental education practice in the United States;

"(C) evaluate the effectiveness of teaching environmental education as a separate subject, and as an integrating concept or theme; or

"(D) evaluate the effectiveness of using environmental education in helping students improve their assessment scores in mathematics, reading or language arts, and the other core academic subjects.

"(5) Executing projects that advance widespread State and local educational agency adoption and use of environmental education content stand-

ards, including adoption and use of such standards in textbook selection criteria.

"(6) Planning and initiating new State or national sources of environmental education funding, such as—

"(A) environmental education trust funds;

"(B) permanent funds with dedicated funding sources, such as environmental fines;

"(C) lotteries;

"(D) State licenses; or

"(E) user fees.

"(7) Developing a State Environmental Literacy Plan.

"(8) Planning a conference on Environmental Literacy.

"SEC. 5624. APPLICATIONS.

"(a) IN GENERAL.—Each nonprofit organization, State educational agency, local educational agency, or institution of higher education desiring a grant under this subpart shall submit to the Secretary an application that contains a plan to initiate, expand, or improve environmental education programs in order to make progress toward meeting State standards for environmental learning and contains an evaluation and accountability plan for activities assisted under this part that includes rigorous ob-

jectives that measure the impact of activities funded under this part.

"(b) PRIVATE SCHOOL AND HOME-SCHOOLED STUDENTS.—An application for a grant under this subpart may provide for the participation, in the activities funded under the grant, of—

"(1) students enrolled in private nonprofit elementary schools or secondary schools, and their parents and teachers; or

"(2) home-schooled students, and their parents and teachers.

"SEC. 5625. REQUIREMENTS.

"(a) ANNUAL REPORT TO THE SECRETARY.—In order to continue receiving grant funds under this subpart after the first year of a multiyear grant under this subpart, the administrator of the grant shall submit to the Secretary an annual report that—

"(1) describes the activities assisted under this subpart that were conducted during the preceding year; and

"(2) demonstrates that progress has been made in helping schools to meet State standards for environmental education and in accomplishing one or more of the purposes set forth in section 5621 for the Environmental Education Grant Program, and

"(3) describes the results of the grantee's evaluation and accountability plan.

"(b) ADMINISTRATIVE EXPENSES.—Not more than 15 percent of the grant funds made available to a nonprofit organization, State educational agency, local educational agency, or institution of higher education under this subpart for any fiscal year may be used for administrative expenses.

"SEC. 5626. ADMINISTRATIVE PROVISIONS.

"(a) FEDERAL SHARE.—The Federal share under this subpart shall not exceed—

"(1) 90 percent of the total cost of a program assisted under this subpart for the first year for which the program receives assistance under this subpart; and

"(2) 75 percent of such cost for the second and each subsequent such year.

"(b) PROPORTIONALITY.—To the extent practicable, the Secretary shall ensure that grants awarded under this subpart are equitably distributed among nonprofit organizations, State educational agencies, local educational agencies, and institutions of higher education, serving urban and rural areas.

"(c) REPORT TO CONGRESS.—Not later than June 1, 2008, the Secretary shall submit a report to Congress that—

"(1) describes the programs assisted under this subpart;

"(2) documents the success of such programs in improving national and State environmental education capacity; and

"(3) makes such recommendations as the Secretary determines appropriate for the continuation and improvement of the programs assisted under this subpart.

"(d) AVAILABILITY OF FUNDS.—Amounts made available to the Secretary to carry out this subpart shall remain available until expended.

"SEC. 5627. SUPPLEMENT, NOT SUPPLANT.

"Funds made available under this subpart shall be used to supplement, and not supplant, any other Federal, State, or local funds available for environmental education activities.".

SEC. 203. PRIORITY STATUS FOR LOCAL EDUCATIONAL AGENCIES OFFERING ENVIRONMENTAL MAGNET SCHOOLS.

Section 5306 (20 U.S.C. 7231e) is amended—

(1) in paragraph (2), by striking "and" after the semicolon;

(2) in paragraph (3), by striking the period and inserting "; and"; and

(3) by adding at the end the following:

"(4) propose to create new environmental magnet school programs or enhance existing environmental magnet school programs.".

TITLE III—ELIGIBILITY OF ENVIRONMENTAL EDUCATION ACTIVITIES UNDER EXISTING GRANT AND FUNDING PROGRAMS

SEC. 301. ENVIRONMENTAL EDUCATION AS AN ELIGIBLE ACTIVITY FOR TEACHER TRAINING PROGRAMS.

(a) ENSURING ENVIRONMENTAL EDUCATION IS INCLUDED IN TEACHER CERTIFICATION OR LICENSING REQUIREMENTS.—Section 2113(c)(1)(C) (20 U.S.C. 6613(c)(1)(C)) is amended by inserting "environmental and" after "including".

(b) ADDITION OF NEW STRATEGIES FOR PROFESSIONAL DEVELOPMENT.—Section 2113(c)(10) (20 U.S.C. 6613(c)(10)) is amended by inserting "field-based learn-

ing, place-based learning, service learning, experiential learning," after "peer networks,".

(c) INTEGRATION OF ENVIRONMENTAL LEARNING INTO THE CURRICULA.—Section 2113(c) (20 U.S.C. 6613(c)) is further amended by adding at the end the following:

"(19) Encouraging and supporting the training of teachers and administrators to effectively integrate environmental education, including training in field-based learning, place-based learning, service learning, outdoor learning, and experiential learning, into the curricula and instruction in order to improve teaching, decision-making, school improvement efforts, and accountability in all subjects.".

(d) USE OF LOCAL FUNDS FOR TRAINING ON EFFECTIVE INTEGRATION OF ENVIRONMENTAL EDUCATION.—Section 2123(a)(3)(B) (20 U.S.C. 6623(a)(3)(B)) is amended—

(1) in clause (iv), by striking "and" after the semicolon;

(2) in clause (v), by striking the period and inserting "; and"; and

(3) by adding at the end the following:

"(vi) provide training on how to effectively integrate environmental learning, in-

cluding training in field-based learning, place-based learning, service learning, and experiential learning, into the curricula and instruction.".

SEC. 302. ENVIRONMENTAL EDUCATION AS AN AUTHORIZED PROGRAM IN THE FUND FOR THE IMPROVEMENT OF EDUCATION.

Section 5411(b) (20 U.S.C. 7243(b)) is amended—

(1) by redesignating paragraph (9) as paragraph (10); and

(2) by inserting after paragraph (8) the following:

"(9) Activities and programs that advance environmental education, including interdisciplinary courses that integrate the study of natural, social, and economic systems and the use of the environment as an integrating theme for a school curriculum, as well as field-based learning, place-based learning, service learning, outdoor learning, and experiential learning programs.".

TITLE IV—AMENDMENTS TO OTHER LAWS

SEC. 401. DEFINITIONS.

(a) INDIVIDUALS WITH DISABILITIES EDUCATION ACT.—Section 602(10) of the Individuals with Disabilities Education Act (20 U.S.C. 1401(10)) is amended—

(1) in subparagraph (C)(ii), by striking "9101(23)" and inserting "9101(24)"; and

(2) In subparagraph (D)—

(A) in clause (ii), by striking "9101(23)(C)(ii)" and inserting "9101(24)(C)(ii)"; and

(B) in clause (iii), by striking "9101(23)(C)(ii)" and inserting "9101(24)(C)(ii)".

(b) NATIONAL SCIENCE FOUNDATION AUTHORIZATION ACT OF 2002.—Section 4(10) of the National Science Foundation Authorization Act of 2002 (42 U.S.C. 1862n note) is amended—

(1) by striking "9101(26)" and inserting "9101(27)"; and

(2) by striking "7801(26)" and inserting "7801(27)".

SEC. 402. DEPARTMENT OF EDUCATION ORGANIZATION ACT.

(a) OFFICE OF ENVIRONMENTAL LITERACY.—Title II of the Department of Education Organization Act (20 U.S.C. 3411 et seq.) is amended by adding at the end the following:

"SEC. 221. OFFICE OF ENVIRONMENTAL LITERACY.

"(a) OFFICE OF ENVIRONMENTAL LITERACY.—There shall be in the Department an Office of Environmental Literary (referred to in this section as 'the Office').

"(b) DIRECTOR.—

"(1) APPOINTMENT AND REPORTING.—The Office shall be headed by a Director of Environmental Literacy (in this section referred to as the 'Director'), who shall be appointed by the Secretary.

"(2) DUTIES.—The Director shall—

"(A) hold a national summit every five years to develop a national plan for kindergarten through grade 12 environmental education and coordinate the resulting implementation process for the plan;

"(B) coordinate the development of voluntary national standards and a national model curriculum;

"(C) administer the Environmental Education Grant Program under part E of title II

of the Elementary and Secondary Education Act of 1965;

"(D) administer the Grant Program for Enhancing Education through Environmental Education Partnerships Program under part E of title II of the Elementary and Secondary Education Act of 1965; and

"(E) work in partnership with education activities at the Environmental Protection Agency, the National Oceanic and Atmospheric Administration, the Department of the Interior, and the National Science Foundation to advance kindergarten through grade 12 environmental education.".

(b) CLERICAL AMENDMENT.—The table of contents in section 1 of the Department of Education Organization Act (20 U.S.C. 3401 note) is amended by inserting after the item relating to section 220 the following new item:

"Sec. 221. Office of Environmental Literacy.".

SEC. 403. NATIONAL ASSESSMENT OF EDUCATION PROGRESS ACT.

Section 303(b)(2)(D) of the National Assessment of Educational Progress Authorization Act (20 U.S.C. 9622(b)(2)(D)) is amended by striking "foreign languages, and arts," and inserting "foreign languages, arts, and environmental education,".

Appendix D

Environmental Education Regulation ***13A.04.17***

MARYLAND STATE DEPARTMENT OF EDUCATION
ENVIRONMENTAL EDUCATION REGULATION

COMAR 13A.04.17 Environmental Education

.01 Program
Each local school system shall provide a comprehensive, multi-disciplinary program of environmental education within current curricular offerings at least once in the early, middle and high school learning years.

.02 Purpose
The purpose of this environmental education program is to enable students to make decisions and take actions that create and maintain an optimal relationship between themselves and the environment, and to preserve and protect the unique natural resources of Maryland, particularly those of the Chesapeake Bay and its watershed.

.03 Goals
The following environmental education goals and subgoals should be incorporated in local school system curricular offerings:

A. Understand and value the diversity and interdependence of the biological and physical environment, which includes to:
(1) Observe and investigate the biological and physical environment,
(2) Understand that plants and animals that use the environment to satisfy their needs are linked to the biological and physical components of their environment,
(3) Understand that people have a powerful impact on and responsibility for environmental conditions,
(4) Recognize that as human population increases, its impact on the environment becomes more pronounced;

B. Understand and value the interdependence between the environment and our health, economy, and culture, which includes to:
(1) Participate in activities that demonstrate the relationship between personal health and the quality of the environment.
(2) Recognize that a viable economy is dependent on responsible use of natural resources
(3) Understand the impact of interaction of culture and technology on the use and alteration of the environment;

C. Understand and value how aesthetic experiences provide insight and enrich interactions with the environment, which includes to:
(1) Develop an understanding of the aesthetic qualities that exist in the environment.
(2) Develop skills and sensitivities to apply aesthetic criteria to environmental concerns,
(3) Develop the ability to formulate, apply, and communicate personal aesthetic criteria for assessing environmental issues;

D. Develop and apply their knowledge and skills to protect and sustain environmental quality, which includes to:
(1) Understand how individual decisions and actions impact the environment
(2) Apply knowledge of environmental concepts to patterns of personal behavior and choice,
(3) Apply responsible decision-making to home-related activities impacting the environment,
(4) Explore and evaluate careers in the environmental field;

E. Develop and apply knowledge and skills at the community level for cooperative action to protect and sustain the environment, which includes to:
(1) Understand how cooperation among communities (including citizens, businesses, interest group, governmental agencies, and others) is essential to maintain and improve the environment,
(2) Work with others in groups and organizations to maintain and improve the environment.

.04 Certification Procedures
By September 1, 1990 and each five years after, each local school superintendent of schools shall certify to the State Superintendent of Schools that the comprehensive programs of environmental education meets, at a minimum, the requirements set forth in Regulations .01 and .03. This certification shall describe how the regulations are being met at each learning level in accordance with reporting standards developed by the Department of Education.

Appendix E

Chesapeake 2000 Agreement – Meaningful Bay Experiences

STEWARDSHIP AND MEANINGFUL WATERSHED EDUCATIONAL EXPERIENCES

The "Stewardship and Community Engagement" Commitment of the *Chesapeake 2000* agreement clearly focuses on connecting individuals and groups to the Bay through their shared sense of responsibility and action. The goal of this Commitment, included below, not only defines the role of the jurisdictions to *promote* and *assist*, but formally engages schools as integral partners *to undertake initiatives* in helping to meet the Agreement. This goal commits to:

> *Promote individual stewardship and assist individuals, community-based organizations, businesses, local governments and schools to undertake initiatives to achieve the goals and commitments of this agreement.*

Similarly, two objectives developed as part of this goal describe more specific outcomes to be achieved by the jurisdictions in promoting stewardship and assisting schools. These are:

> *Beginning with the class of 2005, provide a meaningful Bay or stream outdoor experience for every school student in the watershed before graduation from high school.*
>
> *Provide students and teachers alike with opportunities to directly participate in local restoration and protection projects, and to support stewardship efforts in schools and on school property.*

There is overwhelming consensus that knowledge and commitment build from first-hand experience, especially in the context of one's neighborhood and community. Carefully selected experiences driven by rigorous academic learning standards, engendering discovery and wonder, and nurturing a sense of community will further connect students with the watershed and help reinforce an ethic of responsible citizenship.

To this end, the Chesapeake Bay Program Education Workgroup seeks to define a common set of criteria to help the Bay watershed jurisdictions meet the intent of this Commitment of the *Chesapeake 2000 Agreement.* From these criteria, each jurisdiction will continue to craft and refine its own plan, tailored to its own population, geography, and fiscal and human resources.

Defining *a Meaningful* Bay or Stream Outdoor Experience

A *meaningful* Bay or stream outdoor experience should be defined by the following.

Experiences are investigative or project-oriented. Experiences include activities where questions, problems, and issues are investigated by the collection and analysis of data, both mathematical and qualitative. Electronic technology, such as computers, probeware, and GPS equipment, is a key component of these kinds of activities and should be integrated throughout the instructional process. The nature of these experiences is based on each jurisdiction's academic learning standards and should include the following kinds of activities.

- Investigative or experimental design activities where students or groups of students use equipment, take measurements, and make observations for the purpose of making interpretations and reaching conclusions.

- Project-oriented experiences, such as restoration, monitoring, and protection projects, that are problem solving in nature and involve many investigative skills.

- Social, economic, historical, and archaeological questions, problems, and issues that are directly related to Bay peoples and cultures. These experiences should involve fieldwork, data collection, and analysis and directly relate to the role of the Bay (or other bodies of water) to these peoples' lives.

Experiences such as tours, gallery visits, simulations, demonstrations, or "nature walks" may be instructionally useful, but alone do not constitute a *meaningful* experience as defined here.

Experiences are richly structured and based on high-quality instructional design. Experiences should consist of three general parts including a) a preparation phase; b) an outdoor action phase; and c) a reflection, analysis, and reporting phase. These "phases" do not necessarily need to occur in a linear fashion. These include the following.

- The *preparation phase* should focus on a question, problem, or issue and involve students in discussions about it. This should require background research and student or team assignments as well as management and safety preparation.

- The *action phase* should include one or more outdoor experiences sufficient to conduct the project, make the observations, or collect the data required. Students should be actively involved with the measurements, planning, or construction as safety guidelines permit.

- The *reflection phase* should refocus on the question, problem, or issue; analyze the conclusions reached; evaluate the results; and assess the activity and the student learning.

Experiences are an integral part of the instructional program. Experiences should not be considered ancillary, peripheral, or enrichment only, but clearly part of what is occurring concurrently in the classroom. The outdoor experiences should be part of the division curriculum and be aligned with the jurisdiction's learning standards. Experiences should make appropriate connections among subject areas and reflect an integrated approach to learning. Experiences should occur where and when they fit into the instructional sequence.

Experiences are part of a sustained activity. Though an outdoor experience itself may occur as one specific event, occurring in one day, the total duration leading up to and following the experience should involve a significant investment of instructional time. This may entail smaller amounts of outdoor time spread over an entire school year. Likewise, the actual outdoor experiences may not necessarily involve all students in a class at the same time. Rich learning experiences, especially those involving monitoring and restoration activities, may require time increments spread over weeks or even months. A sustained activity will generally involve regularly-scheduled school time and may involve extended day or weekend activity.

Experiences consider the watershed as a system. Experiences are not limited to water-based activities directly on the Bay, tidal rivers, streams, creeks, ponds, wetlands, or other bodies of water. As long as there is an

intentional connection made to the water quality, the watershed, and the larger ecological system, outdoor experiences that meet the intent of the Commitment may include terrestrial activities in the local community (e.g., erosion control, buffer creation, groundwater protection, and pollution prevention).

Experiences involve external sharing and communication. Experiences should warrant and include further sharing of the results beyond the classroom. Results of the outdoor experiences should be the focus of school-based reporting, community reporting, publishing, contribution to a larger database of water quality and watershed information, or other authentic communication.

Experiences are enhanced by natural resources personnel. Utilizing the expertise of scientists and natural resources professionals can heighten the impact of outdoor experiences. This includes both their participation in the classroom and leadership on-site during outdoor activities. These personnel have technical knowledge and experience that can serve to complement the classroom teacher's strengths and augment the array of resources for the learning. Additionally, these professionals can serve as important role models for career choices and as natural resources stewards.

Experiences are for all students. As it is crucial for all citizens to have an understanding of and connection with their own watershed, an outdoor experience is for all students regardless of where they live. Much of the land area in the jurisdictions is outside of the Bay watershed; however, it is intended that students residing in those areas have similar opportunities within their own local setting or beyond.

It is also clear that these kinds of experiences must be extended to all students including students with disabilities, in alternative programs, and special populations. No child should be excluded from a *meaningful* watershed experience.

Meaningful Experiences across the K-12 Program

It is the intention that every student somewhere in the K-12 program will have a *meaningful* outdoor watershed experience before graduation from high school; however, it is the expectation that these kinds of activities will occur throughout formal schooling. Beginning with the primary grades, the jurisdictions' academic learning standards in the social and natural sciences call for inquiry, investigation, and active learning. These skills, concepts, and processes increase in complexity and abstraction, "spiraling" and building throughout the elementary, middle, and high school programs. Likewise, the experiences should reflect this progression.

Outdoor experiences should occur at each level, elementary, middle, and high school. These experiences should be defined by the local curriculum, be aligned with the jurisdiction's learning standards, and mirror the developmental level of students.

The following example "scope and sequence" describes experiences that should be appropriate for many students in the K-12 program.

> **K-5 experiences** should be predominantly local, school, or neighborhood-based, including activities reflecting students' background knowledge, shorter attention span, and physical capabilities. Experiences must clearly relate to academic learning standards across subject areas and reinforce basic concepts such as maps and models, habitat principles, and the concept of the water cycle and watersheds. Care must be taken with the introduction or discussion of complex issues.

6-8 experiences should focus on team and class projects and investigations. These experiences should reinforce research skills requiring the use and analysis of more authoritative print and electronic resources. Longer-term restoration, monitoring, or investigative projects should be conducted locally or on school grounds. Actual student experiences in or near water may be appropriate for many middle school students (following school safety guidelines carefully). Activities such as water-quality testing can be used to reinforce many science, mathematics, and technology skills developed in middle school.

9-12 experiences should reflect students' more abstract reasoning and detailed planning ability. Locally based activities continue to be important, but student watershed experiences beyond the immediate community will have considerable impact in meeting academic and stewardship goals. First-hand experiences in or near water should be part of the implemented curriculum, especially as these experiences relate to the Earth and biological sciences, concepts developed in civics and government, and attitudes reinforcing responsible citizenship.

Conclusion

The preceding consensus criteria define a clear vision for bringing the Bay into every classroom and every child out into the watershed in a *meaningful* way. It will be the goal of every educator, teacher and administrator, to move toward incorporating those experiences that build academic success, reinforce responsible citizenship, and work toward the goals of the *Chesapeake 2000* agreement. With inspired leaders, committed parents, and supporting communities garnering the fiscal and human resources to help make this happen, young people will be significant contributors to healthy, bountiful, and enduring watersheds.

Appendix F

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Appendix G

Research & Resource

RESEARCH & RESOURCES

- Children & Nature Network (C&NN) was created to encourage and support the people and organizations working to reconnect children with nature. http://www.childrenandnature.org/

- *Children & Nature Network Annotated Bibliographies of Research and Studies, Volume 1, February 2007*, by Cheryl Charles*, Volume 2, June 2007*, by Alicia Senauer. The Children & Nature Network has developed two sets of abstracts of premier research studies, with links to original research, focused on the growing gap between children and nature, and the increasing scientific knowledge about the importance of nature experiences to healthy child development. Available for download at http://www.cnaturenet.org/research/Intro.

- "Children and Nature 2008 – A Report on the movement to reconnect children to the natural world - http://www.childrenandnature.org/uploads/CNMovement.pdf

- "Community Action Guide: Building The Children & Nature Movement from the Ground Up" http://www.childrenandnature.org/uploads/CNActGuide1.1.pdf

- Impact on Outdoor Education Programs – http://wilderdom.com/phd/references.html

- Louv, Richard."Last Child in the Woods: Saving Our Children from Nature-Deficit Disorder". http://richardlouv.com/ (there is now an updated version for 2008).

- Lieberman, Gerald A.; and Linda L. Hoody. "Closing the Achievement Gap: Using the Environment as an Integrating Context for Learning." SEER: Poway, CA, 1998. "California Student Assessment Project." SEER: Poway, CA, 2000. Both of these studies are available at www.seer.org.

- Maryland Task Force on Minority Participation in Environmental Community

- PowerPoint on Cultural Relevance in Science Teaching - http://www2.edc.org/itestlrc/Materials/Webcast061406_CulturalRelevanceSciTeaching_Presentation.pdf

- "The effects of environment based education on students' critical thinking skills and disposition toward critical thinking" - http://www.ingentaconnect.com/content/routledg/ceer/2006/00000012/F0020003/art00016

Appendix H

Glossary

GLOSSARY

7 Best Practices in Student Service Learning

Service-learning is a teaching method that combines meaningful service to the community with curriculum-based learning.

High quality experiences meet Maryland's Seven Best Practices for Service-Learning. These projects allow students and teachers to:

1. Meet a recognized need in the community
2. Achieve curricular objectives through service-learning
3. Reflect throughout the service-learning experience
4. Develop student responsibility
5. Establish community partnerships
6. Plan ahead for service-learning
7. Equip students with knowledge and skills needed for service

Chesapeake Bay Program

The Chesapeake Bay Program is a unique regional partnership that has led and directed the restoration of the Chesapeake Bay since 1983. The Chesapeake Bay Program partners include the states of Maryland, Pennsylvania and Virginia; the District of Columbia; the Chesapeake Bay Commission, a tri-state legislative body; the Environmental Protection Agency, representing the federal government; and participating citizen advisory groups.

Common qualities and characteristics of "curriculum-aligned outdoor classroom programs"

- Learning takes place outside (in school yards, parks, non-profit centers, or other outdoor settings) and accomplishes classroom objectives and state standards of learning.
- Programs are experiential and hands-on, facilitating connections between students and the environment.
- Activities are fun, engaging, and personally relevant to student's lives.
- Interdisciplinary and cooperative learning strategies are used and usually involve a reflection component.
- Learning activities include use of inquiry and critical thinking skills – program teach student how to think not what to think
- Assessment and evaluation of teacher/student outcomes are included to insure ongoing program improvement and effectiveness

Core Learning Goals

The Core Learning Goals are part of the Voluntary State Curriculum targeted to high school students; The Core Learning Goals define what students should know and be able to do at each grade level in certain content areas.

DBED

Department of Business and Economic Development – for training programs

DLLR

Department of Labor, Licensing, and Regulation – for training programs

Formal education

Refers to educational opportunities presented through Maryland's structured PreK- 20 public education system.

Governor's 7 Education Priorities

Governor O'Malley's priorities for Maryland education as presented to the Maryland State Board of Education (February 24, 2009). Science, Technology, Engineering, and Mathematics and Career Technology programs, Environmental Literacy were listed among the priority areas.

Higher Education

Refers to Maryland's colleges, universities, and community colleges.

In-service teachers

Teachers currently employed and teaching.

Interconnected statewide trail system

Connects youth and families to communities, schools, and parks would include trails that are:

- Family friendly routes in urban, suburban, and rural areas;
- Used by both local residents and visitors;
- Suitable for multiple human-powered uses;
- Scenic with opportunities for unstructured enjoyment of the natural landscape;
- Accessible to historic, recreational, cultural, and archeological qualities within the landscape;
- Handicap accessible whenever possible;
- Close to home.

LEA

Local Education Agency; refers to a local school system including 23 counties and Baltimore City.

Maryland Civic Justice Corps (CJC)

A six-week summer program for disadvantaged or at-risk youth that has four Essential Pillars which define the program:

1. The CJC teaches life skills through conservation service.
2. The CJC builds personal connections to nature through outdoor recreation and nature interpretation.
3. The CJC Develops environmental citizenship through the introduction and application of stewardship principles.
4. The CJC restores natural and cultural resources in Maryland State Parks and other public lands.

Maryland Environmental Literacy Standards

Draft standards that describe what an environmentally literate student will know and be able to do upon participation in, and graduation from, a Maryland public school program.

Maryland Green Schools™

The Maryland Green School™ Awards Program is a holistic, integrated approach to authentic learning that incorporates local environmental issue investigation and professional development with environmental best management practices and community stewardship. Administered by the Maryland Association for Environmental and Outdoor Education (MAEOE), it is a national model that encourages schools to incorporate environmental education across the curriculum and throughout the school, working with teachers, students, administrative staff,, maintenance crews, and the community.

Maryland's Teacher Professional Development Guidelines

Maryland's Teacher Professional Development Standards guide efforts to improve professional development for all teachers. These standards call on teachers, principals and other school leaders, district leaders and staff, the Maryland State Department of Education, institutions of higher education, and cultural institutions and organizations across the state to work together to ensure that professional development is of the highest quality and readily accessible to all teachers. http://www.marylandpublicschools.org/

Maryland Voluntary State Curriculum

The Voluntary State Curriculum defines what students should know and be able to do at each grade level in certain content areas.

Meaningful Outdoor Experience

A common set of criteria designed to help Bay watershed jurisdiction meet the intent of the Stewardship Provision of the Chesapeake Bay 2000 Agreement. http://www.vaswcd.org/documents/Education/mwee.pdf

Nature Deficit Disorder

A term coined by Richard Louv in his 2005 book *Last Child in the Woods*, refers to the alleged trend that children are spending less time outdoors, resulting in a wide range of behavioral problems. Louv claims that causes for the phenomenon include parental fears, restricted

access to natural areas, and the lure of the screen. (Wikipedia) "Nature Deficit Disorder" is not an accepted medical term.

Nature Play Area

An outdoor space where children are encouraged to connect with nature every day in free, unstructured interactions with natural materials and processes.

The natural elements could include: trees and bushes (for climbing, hiding in and under, leaves and fruit for picking, fallen sticks for making things), plants (for picking blossoms and berries, for examining, for making concoctions, for art work, vines for swinging), rocks (for climbing on and jumping off, for hiding among, for sunbathing on, for chalking pictures on), stones (for building, admiring, creating towns, studying and sorting, art projects), sand (for building, for sifting, for mixing with water and making swimming pools and rivers), dirt patches (for digging, building, burying treasures, mudpies), water (a creek is optimal, a pond is very good, a faucet is good--for mixing with all the above, for washing, for making streams and dams, for leaf and stick boats floating and racing), paths, privacy, some equipment, and adequate time can be provided by adults to enhance and extend the play. Small animals are likely to be present and provide additional interest and pleasure.

Non-formal (non-formal) education

Refers to educational experiences and opportunities presented by non-school entities such as zoos, museums, aquaria, communities, and nonprofit and for-profit organizations.

Outdoor Classroom Programs:

An outdoor classroom program that provides voluntary curriculum-aligned programming and service learning opportunities on public lands in cooperation with local county school systems, local parks and non-profit organizations.

Common qualities and characteristics of "curriculum-aligned outdoor classroom programs":

- Learning takes place outside (in school yards, parks, non-profit centers, or other outdoor settings) and accomplishes classroom objectives and state standards of learning.
- Programs are experiential and hands-on, facilitating connections between students and the environment.
- Activities are fun, engaging, and personally relevant to student's lives.
- Interdisciplinary and cooperative learning strategies are used and usually involve a reflection component.
- Learning activities include use of inquiry and critical thinking skills – program teach student how to think not what to think.
- Assessment and evaluation of teacher/student outcomes are included to insure ongoing program improvement and effectiveness.

Pre-service teachers

Students who are currently enrolled in approved programs to become a certified teacher.

Schoolyard Habitat

Schoolyard habitats are naturalized areas on the school grounds that are easily accessible to the entire school community. The common qualities of well designed schoolyard habitats are: ecological significance, long term community connection and curriculum integration. Well designed schoolyard habitats improve the community's environmental health by reducing storm-water runoff, solving erosion problems, increasing canopy cover, raising the biodiversity index as well as providing children with opportunities for formal and non-formal interactions with the natural world. These accessible habitats may be created or existing natural areas that are used for classroom instruction and for passive interaction with the natural world. Schoolyard habitats are the means for the ultimate goal of schoolyard learning.

Service Learning Programs:

Common qualities/characteristics of Service Learning Programs:

- Outdoor service projects provide opportunities for students to make meaningful contributions to their communities and their environment, while developing a deepened sense of place.
- Projects encourage development of a variety of technical, and civic engagement, and critical thinking skills.
- Programs always include a learning reflection component.
- Programs often encourage a sense of personal empowerment, and connection with community, as well as allowing students to engage in positive interactions with their peers.
- By providing stewardship in their local communities the experiences become personally relevant to students (the real work is at the local level).

State Park Naturalist

Generally, a seasonal park employee charged with developing and implementing interpretive and educational programs for the visiting public. The *Park Naturalists* work in concert with *Park Rangers* to successfully incorporate interpretive programming into the overall mission and operation of the park, especially at times of high visitation.

- Must be knowledgeable in a wide variety of natural and cultural resources especially that he/she is charged with interpreting at a specific park.
- Must possess effective skills in public speaking and have the ability to successfully engage and entertain children and families to enhance their enjoyment and connection with the resources, foster a stewardship ethic and appreciation of the resource.
- Must have an understanding not only of the scientific/biological aspects of interpreting the resource – they must be able to engage the public through an interdisciplinary approach.
- Frequently use creative arts, language arts, music, physical activity, outdoor recreation skills, and simple play to convey those messages.
- Rely heavily on interactive opportunities and sensory stimulation – hands-on interaction with and immersion in the resource.
- Market and document programs, procurement of supplies, supervision/guidance of volunteers.

State Park Ranger

A State Park Ranger has professional responsibility for the stewardship and protection of Maryland State Park natural, cultural, historical and recreational resources. By incorporating interpretation, education, public safety and resource management skills Maryland Park Rangers serve the public as a mentor, inspiring a stewardship ethic and a passion for conservation

- Must be knowledgeable and experienced in the management and stewardship of a wide variety of natural and cultural resources especially that he/she is charged with protecting at a specific park.
- Must possess the skills and expertise needed to effectively *interpret* the resources for the visiting public to successfully communicate their significance and relevance.
- Provides natural, cultural, historical, and recreational programs for visitors to enrich and educate the public by training interpretive staff, coordinating interpretive programs including special events, overseeing the procurement of interpretive supplies, evaluating programs, and advising the management staff on budgetary needs.
- Must possess effective skills in public speaking and have the ability to successfully engage and entertain children and families to enhance their enjoyment and connection with the resources, foster a stewardship ethic and appreciation of the resource.
- Performs resource management functions through researching, monitoring, and analyzing the effects of activities or conditions such as hiking, biking, camping, erosion, nuisance wildlife, and water quality on both visitors and resources by coordinating and/or implementing programs which support best management practices.
- Plans and coordinates activities on public lands and provides information to internal and external customers about forest and park resources and operations to facilitate the visitor's safe and enjoyable use of Public Lands by scheduling activities, responding to inquiries, updating electronic information and by providing guidebooks, maps, signs, handouts, and exhibits.
- Leads seasonal employees and volunteers in the performance of their operational duties by providing written and verbal instruction, on site-supervision, training, scheduling, and follow-up.
- Performs administrative functions such as compiling statistical information, maintains inventories, and assists with preparing fiscal reports pertaining to programming, maintenance, concessions, equipment, and seasonal salaries to ensure fiscal responsibility by providing accurate information and data to the management staff.

Underserved Communities

Communities that are unable to access quality programs, state parks and public lands for reasons that include but are not limited to economic circumstances, cultural barriers, and awareness. Underserved communities exist in urban, suburban, and rural settings throughout the state.

Appendix I

Partnership and Committees

Community & Public Lands Workgroup

Co-Chair - Tracy Bowen, Alice Ferguson Foundation
Co –Chair Jackie Carrera, Parks and People Foundation
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Mary Washington, Parks and People Foundation
John Wilson, Maryland Department of Natural Resources, Land Acquisition & Planning
Heather White, National Wildlife Federation
Sarah Witcher, Maryland Department of Natural Resources, Gunpowder Falls State Park
Stephanie Yanovitz, State Highway Administration

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Co-Chair - Dr. Kevin Maxwell, Anne Arundel County Public schools
Steve Barry, Anne Arundel County Public Schools
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Nancy Carey, Maryland State Department of Education
Patrick Delany, Garrett County Public Schools (retired)
Robert E. Dulli, Deputy to the Chairman, National Geographic Society
Katherine Foat, The Maryland Zoo in Baltimore
Linn Griffiths, Harford County Public Schools 2008 Teacher of the Year
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Karen Harris, Language Arts, Baltimore County Public Schools
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