



Breakout Session Descriptions

PRESENTATIONS

Native American Fields

Presenter: Lori Gongora

As part of a Native American village in Southwestern Virginia, children investigate various types of wet and dry soil and plant vegetation--experimenting to explore growth. The students determine what plants should grow in the fields to provide for the tribe. This curriculum was written and developed through a VDOE Javitz grant.

Entrust

Presenter: Lillie Baker-Moreland, Martinsville Middle School

Martinsville Middle School is dedicated to environmental protection, maintenance and restoration. Students learn the 4 R's of the ecological preservation: recycle, restore, reduce and reuse. "Entrust" (Derived from environmental trust) is our program that will explain the benefits of "Trout in the Classroom", how to relate it to SOL's 6.7 and to engage the students in solutions to the entrustment of our ecosystem.

Studying Watersheds: A Cross-curriculum Learn & Serve Project

Presenter: Tim Taglauer, Shenandoah National Park, Sandra Weikle, teacher & students from Luray High School

This session will showcase a highly successful Learn & Serve project. A team of students from Luray High School are monitoring the water quality of a local stream to determine what environmental factors impact the watershed in which they live. Known as the Waterdaws, these students have been taking water samples from Hawksbill Creek from its spring-fed origin in Shenandoah National Park to where it joins the Shenandoah River. They analyze their findings from the perspective of the various disciplines to understand the characteristics of the stream and what factors might influence the water quality. At this presentation, faculty and students from Luray High School will report on their results and share how they are contributing to the protection of water resources in their community.

Armed and Dangerous: Destroying Virginia's Invasive Species Through Education

Presenter: Michelle Prysby, Virginia Master Naturalist Program

Co-presenters: Ellen Powell and Carol Heiser

Invasive species are the second most significant threat (after habitat loss) to biodiversity in the United States. Invasives cost Virginia as much as \$1 billion every year. Education can help slow the spread of invasive species by helping people make wise decisions that reduce the opportunities for invasives to take root in our natural environments. This session will provide an overview of the invasive species issue, provide practice in recognizing common invasive plants, and demonstrate standards-based activities to do with youth to teach them about the invasives problem. Participants will take home invasives ID resources and curriculum materials.

What is Killing the Bats? Are Virginia Bats Ok?

Presenter: Carol Zokaites, Virginia Department of Conservation & Recreation

Hibernating bats are dying by the tens of thousands in the northeastern United States, and a growing circle of top scientists is anxiously trying to figure out why. The mystery affliction, reported in New York, Vermont, Massachusetts and Connecticut is dubbed "white-nose syndrome" because many affected bats had visible halos of white fungus around their faces

Fifteen bat species call Virginia home, with eight of these bat species living in Virginia caves for at least part of the year. "Corynorhinus townsendii virginianus", The Virginia Big Eared bat, is the Virginia State Bat. Information and activities about these bats will be shared.

This presentation will include information about white noise and any effect it might have on Virginia's hibernating cave bat colonies.

Making it Real: Citizen Science and Service-learning

Presenter: Sally Lewis, Hampton City Schools

Looking for ways to engage students in inquiry science while sharpening their SOL skills in observation, data collection, graphing and analysis? This session will explore two techniques to involve students in "real" science—data collection for research projects ("citizen science") and service-learning projects in their local communities. Successful models of both techniques using local and national resources will be presented along with resources on how to start or locate similar projects. Using community partners and grants will be discussed. Participants will get online links to "citizen science" projects for all age groups. Some of these include Monarch Watch, Journey North, Oyster Reef Keepers, GLOBE, among others. Everyone will receive a template for planning a local service-learning project.

Virginia's Natural Area Preserve System - Awareness and Educational Opportunities

Presenter: Bryan Wender

Virginia's system of natural area preserves is a remarkable assemblage of protected lands, most of which are state-owned and managed by the Department of Conservation and Recreation's Natural Heritage Program. Now numbering 54 and consisting of over 45,000 acres, state natural area preserves are identified and protected by purchase or easement for their outstanding biodiversity values. These remarkable lands support habitats of rare, threatened, and endangered species, exemplary natural communities, significant caves, and other outstanding natural features (collectively, "natural heritage resources"). While the first priority of natural area preserve management is to maintain, enhance, and restore natural heritage resources, these lands also provide excellent opportunities for recreation, research and education.

Moving Beyond "Year of the Frog" - Priorities for salamander conservation in Appalachia

Presenter: Jennifer Buff, Education Program Manager; Brian Gratwicke, Amphibian Conservation Biologist; and Jennifer Sevin, Training Program Manager – Smithsonian Institute

The year 2008 was named "Year of the Frog" by the World Association of Zoos and Aquariums, but in the Appalachian Mountains, it is the salamander who takes center stage. Appalachia is considered an international biodiversity hotspot for salamanders. There is a vast diversity of salamander species in this region (many are found nowhere else in the world). Some experts have even suggested that the biomass of salamanders alone exceeds the biomass for rest of the vertebrates combined! But salamander populations face daunting challenges in the next century, on both global and local scales. In May 2008, the Smithsonian's Conservation and Research Center hosted 30 amphibian specialists at a 2-day retreat to debate the challenges facing salamander populations and establish priorities for science and conservation. Join us to learn about these priorities and contribute your ideas on how environmental education would aid in the conservation of salamanders – our Appalachian treasures.

Bringing the Environment into the Classroom

Presenters: Brian Williams, Wayne Kirkpatrick and Betty Kirkpatrick, Dan River Basin Association

Learn about an award winning, educational experience in Southwest Virginia and how it is implemented to create excitement in the classroom and connect students to their local watershed. The Trout in the Classroom Program and Meaningful Watershed Educational Experience combines two unique programs developed for schoolchildren and utilizes teacher and student resources to successfully lead these communities toward a richer quality of life, helping to develop a shared sense of responsibility and action for the environment. These programs have worked together presenting curriculum that teachers can relate to watershed SOL's and help fulfill the Virginia's Children and Nature Initiative.

OUTDOOR ACTIVITIES (Located in adjacent park shelter)

Expanding Children's Awareness in Nature

Presenter: Stephen Sylvan Willig, Sylvan's Youth Education Service

How much do we miss when we're outdoors? Participants will learn exercises and games to share with children that offer specific ways of walking, seeing, and listening that will help them expand their awareness in nature (and everywhere). You will also learn how to teach children to better use all their senses to become more attuned to the natural world. These tools are designed to be used with students in grades 3 and up.

Using GPS to Create an Educational Outdoor Experience

Presenter: Robin Jensen, Virginia Museum of Natural History

A common complaint of environmental educators is that children spend too much time indoors, watching TV, and playing video games. This presentation will show educators how to use one form of technology, GPS (Global Positioning System), to bring kids and adults outside. Participants in this workshop will learn the basics of GPS use, how to use it to teach important environmental and history lessons, and will participate in various fun outdoor activities that they can use with groups of children and adults. These activities teach orienteering skills, encourage group cooperation, give participants GPS experience, and they all take place outdoors. In case of rain, this workshop can still work, although some of the fun activities will have to be explained rather than experienced.

Photography as Art and Documentation

Presenter: Bill Portlock, Chesapeake Bay Foundation

Photography can be an excellent medium to document your environmental education instruction and activities, to engage your students in projects that require illustration, and can add a new dimension to a project by reaching a broader audience through the sharing of your photographs. Bring your camera and enthusiasm for a brief indoor session followed by an outdoor application session.

Bill's photographs were recently published in the National Geographic Society's book "Chesapeake: Exploring the Water Trail of Captain John Smith" by John Page Williams. "I try to use photography to help others see our connections to the natural world. Photographs do not take the place of a field experience, but capturing and sharing pieces of the outside world with others can instill not just a better appreciation of the world around us but can also begin discussions into how our actions affect all the inhabitants of the world we live in."

PANELS

LandScope America - The Conservation Guide to America's Natural Places

Presenter: Jason Bulluck, Division of Natural Heritage, Department of Conservation & Recreation

"The conservation guide to America's natural places," LandScope America is a collaborative effort of NatureServe and the National Geographic Society. Representing one of five pilot states, the Virginia Natural Heritage Program is a key collaborator the development of LandScope America, and LandScope Virginia, a state-focused sub-site. As a sophisticated, information-rich, and interactive online resource, LandScope will also inspire users to become engaged in conservation efforts. In addition to an interactive map viewer stocked with natural resource data layers, LandScope will offer a social networking component so users may share stories and learn about local conservation challenges and successes.

Last Child in the Woods: Where's the Path Leading?

Presenter: Denny Casey, Virginia Museum of Natural History

Panelists: Rick Van Noy, Author, Bill Portlock, Chesapeake Bay Foundation, Ann Regn, Virginia Office of Environmental Education, Department of Environmental Quality, Denny Casey, Virginia Museum of Natural History, Paula Klonowski, Department of Education

Panel members will present insights into initiatives at the national, state, and local levels aimed at environmental literacy, meaningful outdoor and nature experiences, and environmental action. Panelists will update pending NCLI legislation; present how the movement fits into Virginia Naturally's vision for environmental education; discuss Virginia's initiative and grant application to The Conservation Fund to provide training and support for early childhood programming; and, present plans for a new local grant-funded C&NN community program.

Coastal GEMS: A Tool for Coordinated Coastal Planning and Education

Presenters: Virginia Witmer & Nick Meade, Virginia Coastal Zone Management Program, Department of Environmental Quality

The Virginia Coastal Zone Management Program's Coastal Geospatial and Educational Mapping System (Coastal GEMS) is a dynamic internet mapping application that serves as a gateway to information about Virginia's coastal resources. Coastal GEMS is a collaborative effort, including the data of multiple natural resource agencies and other partnering coastal organizations. The application is designed to create a stronger understanding of how activities on the land and in the water affect one another, highlight the best remaining coastal resources in one big picture, and simplify management decisions by displaying data from all partners in one place. Coastal GEMS includes conservation planning tools and resource "fact sheets", allowing users to better understand coastal resource use and values and enabling them to protect and manage these resources in a sustainable fashion.

WORKSHOPS

Water Chemistry for the Faint of Heart

Presenter: Barry Fox

So you think hard water is actually ice. The term "pH" is the phonetic spelling for "F." TSS means "tough stuff sister." You have been deceived. Join us in this session to get the low-down on water chemistry, how to explain and demonstrate water properties, determine and interpret important water quality indicators. We will use wet chemical kits and electronic probes, multi-media and hands-on demonstrations. Content is designed for middle school to adult audiences. Participants will receive the following instructional material on CD.

- What is Water? - animated program about water structure and properties
- My Water Sample – classroom instructional activity
- What Do You Know About Water Quality? – PowerPoint about Virginia's water resources
- Water Quality Indicators – companion publication
- List of water resource/quality instruction and education references.

There is a charge of \$10.00 for the CD containing multimedia programs and instructional material payable during the workshop.

Teaching to Diversity: Incorporating Learning Styles into Your Lesson Plans and Teaching Methods

Presenter: Candace Lutzow-Felling, Blandy Experimental Farm, University of Virginia

The most effective teachers are those that are also active learners. However, not everyone learns or teaches in the same way. One person may be listening to your teaching with rapt attention while another is wandering off exploring the surrounding environment. Is this a behavioral challenge? Maybe not! Knowing how to recognize and appreciate learning styles will improve your effectiveness as an environmental educator and will enhance your appreciation for the differences among individual learners. In this workshop we will explore the four main styles of learning, discover and gain insight into our individual learning styles, and will practice developing environmental education lessons that incorporate learning style diversity. Join us and discover this insightful and valuable teaching method!

Media Applications for Enhancing Environmental Education through the Examination of Archaeological Sites

Presenters: Dee DeRoche, Department of Historic Resources & Jon Bachman, Prince William Co. Schools

Through the use of media applications, environmental educators gain practical knowledge of current methods and insights enabling them to discover, study, and interpret the evidence of human influences on past and present environments.

"Solving History's Mysteries: the History Discovery Lab" is the Department of Historic Resources' interactive exhibition that presents this process. Using historic and archaeological sites throughout Virginia, and explaining various scientific techniques, the exhibit introduces students, educators, and the public to place-based learning.

Excavations at Cactus Hill, located in southeastern Virginia, indicate the presence of humans in the western hemisphere 18,000 years ago. Most Virginia residents, teachers, and students are not aware of these recent discoveries. Prince William County Public Schools/Prince William Network will provide pre-taped and streamed video with supporting print material that will address this need.

Rotation- It's Not Just for Tires

Presenter: Emily Ford, Blandy Experimental Farm, University of Virginia

Is your facility limited by space, staffing and budget constraints? Are you looking for a way to maximize program/class attendance within these limitations?

Join Blandy Experimental Farm staff to learn about the challenges we face at the State Arboretum of Virginia and how we developed a way to maximize not only class attendance but to increase students' experiences at our facility. We will share with you some of our program rotations and then we will break into groups to brainstorm and adapt this idea to your situation.

Butterfly Gardens as Outdoor Classrooms

Presenter: Carol Heiser, Department of Game & Inland Fisheries

Learn to design an effective garden plan featuring instruction about butterflies and their life cycles in an outdoor classroom setting. We'll begin with an overview of butterfly life history and the fundamental components of a successful outdoor learning experience for children. The remainder of the session will be a hands-on exercise drawing a planting plan to scale and developing a list of native plants for the design. Although actual dimensions on your site will vary from the example used in the exercise, the finished plan can be adapted as needed to a school, park, or other environmental setting. Each participant will receive a CD of "Native Plants for Wildlife Habitat" and a teaching packet of other resource materials.

Volunteer Monitoring: Educating People by Protecting Waterways

Presenter: James Beckley, Department of Environmental Quality

Volunteers play an important role in protecting Virginia's natural resources. This is particularly true with water quality monitoring. Volunteers ranging from individuals to universities to multi-state organizations actively monitor over 1,000 sites across Virginia. During this workshop, the audience will learn about some common water quality parameters and ways to incorporate monitoring into a meaningful educational experience for all ages. The lesson will conclude with inspiring examples where monitoring and education have helped to improve water quality.

Global Connections: Forests of the World

Presenter: Lisa Deaton, Department of Forestry

Project Learning Tree's newest secondary module helps students explore their connections to the forests of the world and learn how forests affect people and how people affect forests. Participants will receive a copy of the module.

On the Air; Exploring Air Pollution Sources and Solutions

Presenter: Rebecca Davis

In addition to its impact on health, air pollution can lead to the degradation of habitats, loss of species, a reduction in agricultural and forestry productivity and damage to fish stocks.

On the Air is an interactive holistic teaching kit and curriculum developed for, and promoted to 6th grade teachers in the metropolitan Washington DC area. However the curriculum can be downloaded for free, the kit can easily be put together, and the lessons can easily be adapted and enhanced with supplements and used by other grade-level.

Participants will leave the workshop with a cd which will contain the pdfs of the curriculum, a document containing the list of the materials to develop their own kit and additional documents to use as resources.

RiverWorks Discovery

Presenter: Mark Carr

RiverWorks Discovery, a journey of imagination and exploration of America's waterways™, is a hands-on educational program created to familiarize children and their families with all aspects of their watershed. In this session, we will highlight our river based educational activity booklets, which aim at helping children ages 8-12 form an effective bond with our rivers. The booklets are divided into three sections: the Leader's Guidebook contains the necessary background information for adults, the Wheelhouse Logbook reviews history and commerce on the river, and the Wildlife Logbook focuses on the river's impact on the plants and animals in their waters and watersheds. Using our materials, children can also earn the RiverWorks Discovery Patch with their families or as part of a camp or school group. All participants will receive a free copy of our educational activity booklets.

ROUND TABLE PRESENTATIONS

Citizen Water Quality Monitors, College Students and Community Leadership: Benefits for Stakeholders Including Scientists

Presenter: Carolyn Thomas, Ferrum College

The Smith Mountain Lake Volunteer Water Quality Monitoring Program and the Claytor Lake Volunteer Water Quality Monitoring Program are two long-standing successful programs. Citizen monitors take water samples at each lake each summer and Ferrum College faculty and students chemically analyze the water samples each summer. The collaboration among lake residents, college scientists, college students and government agencies (local, the Commonwealth of Virginia and US EPA) has resulted in benefits to all stakeholders. The emphasis is not only trophic status and water quality data collection but also environmental education of the lake residents, certainly improving their lawn practices to more conservation based practices.

Small Watersheds: Teaching and Collaboration Tools

Presenter: Bob Pohlada, Ferrum College

Small watersheds make valuable tools for teaching in many science-related courses. The Ferrum Mountain Creek Watershed at Ferrum College has been used as a teaching tool in all levels of college courses as well as research projects and community education. A website of data and an electronic methods manual of teaching techniques have been developed by a group of faculty at a number of Appalachian colleges through a collaborative project. The manual contains detailed procedures and descriptions of simple equipment for use by students and faculty. The watershed on the Ferrum College campus was instrumented with environmental monitoring equipment. Data is collected on a regular basis and posted to the web site for class use. Data has been shared through the project web site for student study and learning purposes and training has occurred at frequent workshops attended by faculty and students.

MWEE and TIC in Henry County Schools

Presenter: Donna Hicks, Henry County Schools

For the past two school years, Henry County Schools has worked with community and state partners to provide environmental field experiences for over 600 seventh grade students. Starting with Dr. David Jones' implementation of Trout in the Classroom and expanding to include Virginia Save Our Streams benthic macroinvertebrate sampling of local waters, middle school students are immersed in real science as they monitor trout tank conditions, actively participate in stream testing, and study ecological relationships.

Outdoor Classroom in a Bucket

Presenter: Ellen Reynolds

Reaching New Audiences with WHEP (4-H Wildlife Habitat Evaluation Programs)

Presenter: Kris Jarvis, Madison County 4-H Volunteer

If the idea of environmentally based competitions for young people intrigues you, come and learn more about the 4-H Wildlife Habitat Evaluation Contest. Teams train locally for state (and possibly national) contests that introduce them to wildlife habitat management techniques suitable for backyards, school grounds and farms. Workshop participants will sample a hands-on and/or field activity from each of the major components of the contest, including wildlife identification, assessing current habitat and working on a management plan. Suggestions on how to start a local program will be discussed. All 4-H judging program emphasize team work and sound decision making skills. Find out more about what national EE listservs and blogs have been promoting - 4-H WHEP!

Buoys in the Classroom: Integrating Real-Time Data

Presenter: Ann Marie Chapman, NOAA Chesapeake Bay Office

NOAA's Chesapeake Bay Interpretive Buoy System (CBIBS) offers students, teachers and the general public access to real-time biotic and abiotic data from various locations throughout the Bay. In addition to the data, the buoy web site (www.buoybay.org <<http://www.buoybay.org/>>) delivers "investigations", graphing tools, and [coming soon!] curriculum. The evolving web site, along with a growing number of buoys being deployed, means that this initiative will only continue to grow. Learn more about how you can integrate CBIBS into your classroom!