

Environmental Education Resources

Project WILD

...an international program that provides curriculum supplements to formal and non-formal educators of grades K-12 about wildlife and habitats. In Virginia, both are correlated to the science Standards of Learning. An introductory Project WILD activity guide is available by attending a six-hour workshop; a companion Aquatic activity guide is available through a four-hour workshop. Trainings are provided free of charge by the Virginia Department of Game and Inland Fisheries; the program is also supported by the Virginia Izaak Walton League. **CONTACT:** Suzie Gilley, WILD Coordinator, DGIF, 4010 W. Broad St., Richmond, VA 23230; (804) 367-0188; <http://www.projectwild.org/>

WILD School Sites

...a habitat education program of the Virginia Department of Game and Inland Fisheries, School Sites provides an introduction to improving wildlife habitat on school grounds. As of January 2001, there is no prerequisite to attend this full-day workshop. Teachers receive numerous materials including a *Homes for Wildlife* manual and a *Twenty/Twenty Projects and Activities* guide, as well as basic instruction on how to establish habitat on school property that will also function as an outdoor classroom. A training can also be structured for non-formal educators at parks, nature centers and other outreach facilities that wish to partner with local schools on a habitat project (minimum 20 participants). **CONTACT:** Carol Heiser, Wildlife Habitat Education Coordinator, DGIF, 4010 W. Broad St., Richmond, VA 23230; (804) 367-6989.

Project WET

...a national water education program for teachers, youth leaders, nature center staff, museum educators and others. The K-12 supplementary curriculum addresses topics such as atmospheric water, surface and groundwater quality, cultural and historic uses of water, and contemporary water management issues. In Virginia, the program is sponsored by the Department of Environmental Quality, and the WET lessons are correlated to the Virginia Standards of Learning. In addition, water resource trunks—which include an interactive groundwater model—as well as maps, videos and activities are available on loan. **CONTACT:** Ann Regn, Environmental Education Coordinator, DEQ, P. O. Box 10009, Richmond, VA 23240-0009; (804) 698-4442 <http://www.montana.edu/wwwwet/>

Project Learning Tree

...a national program about forests and forest communities, sponsored jointly in Virginia by the Department of Forestry and the Virginia Forestry Association. Like WILD and WET, Project Learning Tree provides training and curriculum supplements that are correlated to the Virginia Standards of Learning. PLT features a Pre K-8 guide as well as several stand-alone, secondary modules on diverse topics such as Focus on Forests, Forest Ecology, and Municipal Solid Waste. **CONTACT:** Lisa Deaton, PLT Coordinator, DOF, P. O. Box 635, Sandston, VA 23150; (804) 328-3031 www.plt.org

Project Underground

...modeled after WILD and the above “sister” programs, Project Underground is an educational curriculum supplement designed to create and build awareness of karst and cave resources and their management needs. Workshops and in-service trainings are available for classroom teachers, youth-group leaders, and the staff of caverns, parks and museums. **CONTACT:** Carol Zokaites, National Coordinator, 2281 Lubna Dr., Christiansburg, VA 24073; (540) 381-8234.

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Ag in the Classroom

... is a statewide educational program created to help teachers provide students in grades K-5 with a greater awareness of the role of agriculture in our economy and society. Teacher training workshops available.

CONTACT: <http://www.vafb.com/aitc/>

Give Water A Hand

... a national watershed education program designed to involve young people in local environmental service projects. Learn about water in your vicinity. Find out where it is located, how people use it, where rainfall flows, and what sources of pollution exist that might affect water quality. Make a map of your watershed, to get the big picture. Investigate the needs for action. Use one of the four Action Guide checklists to explore water issues in the school, home, community, and farm. Choose a project and ask experts to help. Select a service project you'd like to complete that addresses a local problem you've identified. The Action Guide will help you choose your project and find local experts that can help. Plan and implement your project. Now you've picked a project, how is your group going to get it done? Everyone can contribute and you'll learn how to assess when progress is made. To obtain a copy visit: <http://www.uwex.edu/erc/gwah/> or **CONTACT:** Give Water A Hand, 216 Agriculture Hall, 1450 Linden Drive, Madison, WI 53706, (800) WATER20

Water Education Posters

... Water-resources topics (wetlands, point source pollution, non-point source pollution, hazardous materials, water use, waste water, water quality, groundwater, and navigation) of all completed posters are drawn in a cartoon format by the same cartoonist. Posters are available in color or black and white. The reverse sides of the color posters contain educational activities: one version for children in grades 3-5 and the other with activities for children in grades 6-8. The black-and-white posters are intended for coloring by children in grades K-5. The USGS water education posters can be ordered from the following address (please specify poster title(s) and grade level(s)) **CONTACT:** USGS Branch of Information Services, Box 25286, Denver Federal Center, Denver, CO 80225, 800-435-7627, <http://water.usgs.gov/outreach/OutReach.html>

Animal Tracks Activity Guide

... a Conservation Education Program of the National Wildlife Federation. The Teachers activity guide contains 11 units, (backyard wildlife, household chemicals, water conservation, water quality, air quality, energy conservation, recycling paper and aluminum, recycling plastics and glass, composting, pesticides and fertilizers, endangered species) each concentrating on a different conservation issue. A Children's Book is also available (1-800-432-6564). **CONTACT:** (Stock # 1872-9-00-C4) NEA Professional Library, P.O. Box 509, West Haven CT 06516-9904, 800-229-4200, <http://www.nwf.org/nwf>

Water Wizard Van

... a traveling van available for school assemblies, and community events, that has interactive exhibits and educational resources geared toward elementary students and families. The van rotates around the state. **CONTACT:** <http://www.ext.vt.edu/resources/4h/wizard/> Virginia Cooperative Extension Service or your local 4H Center

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Magnificent Ground Water Connection

... developed in cooperation with EPA by the New England Interstate Water Pollution Control Commission. It is a compilation of some of the best ground water-related activities from previously existing curricula, seasoned with a collection of original materials. The activity guide is applicable to a wide range of subject matter and the ground water theme is integrated into stories, songs, math, social studies, art and writing. The topics include basic concepts on the water cycle, water distribution, treatment and stewardship. If you are interested in obtaining the entire curriculum **CONTACT:** N.E.I.W.P.C.C., Boott Mills South, 100 Foot John Street, Lowell, MA 01852, 978-323-7929, <http://www.epa.gov/region01/students/teacher/gndwater.html>

Pollution Prevention (P2) Toolbox

... tool for helping teachers integrate P2 concepts in the classroom. The toolbox contains a series of four page lesson plans on various pollution prevention concepts for schools. Each fact sheet is designed to provide information on how students and teachers can prevent pollution. To obtain a copy **CONTACT:** <http://www.epa.gov/reg5rcra/wptdiv/p2pages/toolbox.htm>

Pollution Solutions

... a Litter Prevention Activities for Virginia Teachers - A curriculum supplement about litter and pollution prevention based on the Standards of Learning for grades K-12. To obtain a copy visit or **CONTACT:** <http://www.deq.state.va.us/education/polsul/index.html> or Department of Environmental Quality, P.O. Box 10009, Richmond, Virginia 23240, 804-698-4442

Journey Into Amazing Caves

... classroom activities designed to teach students the history of caves and caving expeditions. Can be used in conjunction with the IMAX film "Journey Into Amazing Caves." For more information on the IMAX film and to obtain a copy of the lesson plan **CONTACT:** http://www.amazingcaves.com/set_learn_ecology.html

WHEP- Wildlife Habitat Evaluation Program

... a 4-H program that complements Envirothon objectives and involves its own competition, but training manual can be used to educate Envirothon teams. For more information visit the website <http://www.ext.vt.edu/resources/4h/environment/wildjudging/> or **CONTACT:** the 4-H Youth Development agent in your county for more information on how you can participate.

Dirt- Secrets in the Soil

... a collection of classroom activities (in the Project Learning Tree style) designed to introduce soils to 3-5 graders. Some material is specific to Utah, but most can be adapted for use in other states. A companion video features segments to complement each lesson. **CONTACT:** The website: <http://extension.usu.edu/AITC/resources/soils.html> also available for purchase from Utah Ag in the Classroom (lesson plans are free on the web)

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Environmental ACTION Series

... activities for middle to high school students on six topics: energy conservation, water conservation, food choices, waste reduction, chemicals, and habitat & biodiversity. Can be found at bookstores, or ordered from Dale Seymour Publications (a division of Pearson Learning) For more information **CONTACT:** The website: <http://www.pearsonlearning.com/index.cfm> Each book costs about \$12 – 15. Teacher and student guides available.

Journey South

... follow an experimental flock of whooping cranes from Wisconsin to the Chassahowitzka National Wildlife Refuge in Florida. Highlights of the specialized flight training and the migration are posted on the Web as they occur this fall and summarized by email every Friday during the migration (estimated through November or early December). Lesson plans, background information on whooping cranes and pictures from the journey are available online. Sponsored by the Whooping Crane Eastern Partnership. For more information **CONTACT:** <http://www.learner.org/jnorth/fall2001/jsouth/index.html>

Access Nature

... the National Wildlife Federation's new inclusive nature curriculum, Access Nature, helps children make a personal connection to the natural world. The adaptations that follow each of the 45 hands-on activities provide educators (formal and non-formal) with the tools to engage participants with hearing, learning/cognitive, motor and visual disabilities alongside their peers without disabilities. Other features include: alignment with the National Science Education Standards, general disability-related teaching guidelines, a fully developed action project complete with accessibility guidelines, and a disability-related resource section. For more information **CONTACT:** Access Nature, price \$39.95 (716) 461-3092.

The Learning Web

... the Learning Web provides online lesson plans, activities, tutorials (some downloadable and printable in .pdf), and links to references dealing with interdisciplinary studies of natural science. Learning Web culls pages appropriate for K-12 instruction from the US Geological Survey (USGS)'s vast online collection of fact sheets, data, and program sites. For more information **CONTACT:** <http://www.usgs.gov/education/>

Art & Ecology

... a set of resources for teachers and students, including selected readings on a variety of environmental, social, and cultural issues. The main sections of the site investigate artistic orientations, artworks, and community and/or global issues along with historic, critical, and aesthetic dimensions of art education, ecology, and interdisciplinary approaches to developing comprehensive discipline-based art education curricula. **CONTACT:** <http://www.getty.edu/artsednet/resources/Ecology/index.html>

The Living Landscape

... an interactive computer game that takes learners of all ages through various best management and conservation practices to turn a rundown farm and landscape into an environmental showplace. **CONTACT:** CTIC, 1220 Potter Drive, Room 170, West Lafayette, IN 47906-1383. Phone: (765) 494-9555; Fax (765) 494-5969. Cost: \$ 8 first CD and \$5 for each additional CD.

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Splash

... an interactive computer game that delivers information on nonpoint source pollution in a fast paced and entertaining format. Includes sources of NPS in ag, urban and suburban areas. **CONTACT:** CTIC, 1220 Potter Drive, Room 170, West Lafayette IN 47906-1383. Phone: (765) 494-9555; Fax: (765) 494-5969. Cost: \$ 12 first CD and \$ 7 for each additional CD.

Get to the Point

... a video explaining water pollution, non-point source pollution and point source pollution. Grades 3-12. **CONTACT:** Lower Colorado River Authority (LCRA) Video Library, P.O. Box 220 (S225), Austin TX 78767-0220. Cost: \$ 10 each

Storm Sewers Don't Lead to the Sewer Plant

... a video explaining what storm sewers are and how they work. Designed to teach elementary students the danger of polluting storm sewers with trash and chemicals such as paint and motor oil. **CONTACT:** National Association of Conservation Districts (NACD) <http://www.nacdnet.org/> Cost: \$ 9 each

Real Life Farm Adventures for Kids

... join the famous Hard Hat Harry, the heavy equipment/construction genie, takes kids for a journey into the exciting world of farms. A video for elementary grades on increased production and improved technology. **CONTACT:** Publishers Choice, Box 4106, Dept YL82-UX, Huntington Station NY, 11746. \$ 4.95 each plus \$ 2.95 shipping and handling.

Soil. Who Needs It ?

... a video for elementary grades explaining the importance of soil, its texture, soil loss and erosion. **CONTACT:** New Mexico State University, Agricultural Communications Electronic Media Group, Box 3003 MSC 3AI, Las Cruces NM 88003. Phone: (505) 646-5368. Cost: \$ 12.95 plus shipping and handling.

Riparian Forest Buffers

... defines watershed and riparian forest buffer. A video showing how land use affects water quality, denitrification of forest floors and the importance of riparian forested buffers. **CONTACT:** University of Maryland WREC/CE, P.O. Box 169, Queenstown MD 21658. Phone: (410) 827-8056. Fax: (410) 827-9039. Cost: \$ 3.50 plus \$ 3 shipping and handling.

Riparian Buffer Box

... your Riparian Buffer Box is chock full of information and activities for learning about water quality, stream ecology and the benefits of streamside trees. Each box contains three colorful posters, tree leaf identification posters, Loblolly Pine tree seeds, the Riparian Habitat edition of the Wild in the Woods newsletter, the Environmental Education Resources Directory and Aquatic Stewardship and You, Ideas and Resources for Educators and Students; five lessons from Project WET and Project WOW! Your K - 12 students will love it! **CONTACT:** To order your Riparian Buffer Box send a return address label to Ann Regn, Virginia Department of Environmental Quality, 629 East Main Street, Richmond, VA 23219 or call (800) 592-54VA or amregn@deq.state.va.us.

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Love-a-Tree Kits

. . . your kit contains posters, tree ID books, magazines, activity booklet (Streams: Where Water, Trees and Animals Meet). In addition to these resources, the kit includes animal and insect trading cards, and an acorn collection bag. **CONTACT:** For more information and to learn pick up locations, visit <http://www.deq.state.va.us/education/loveatree.html>.

After the Rain: Urban Runoff

. . . explore the importance of water, the pressures our cities are placing on this resource, and ways that individuals can protect local drinking water supplies. **CONTACT:** <http://eesc.orst.edu> Water Resource Orders, Extension & Station Communications, Oregon State University, 422 Kerr Administration Building, Corvallis, OR 97331-2119. Cost: \$20.

Model Inquiries into Nature in the Schoolyard (MINTS)

. . . the book provides background information on common schoolyard plants and animals. It also includes many suggested "lines of inquiry" for guiding students through schoolyard science lessons. The content is based on habitats commonly found in schoolyards, such as a lawn and a parking lot. The book focuses on southwestern Virginia, but many of the topics are applicable throughout Virginia and in other states. **CONTACT:** MINTS Book/VTMNH at 428 N. Main Street, Blacksburg, VA 24061-0542; (540) 231-3001 or email: jtrumbo@vt.edu

Hands on Nature

. . . provides information and activities for exploring the environment with children. Contains topics on adaptations, habitats, cycles, designs of nature and earth and sky. Designed for elementary school students. **CONTACT:** www.vins.web.org/education or Vermont Institute of Natural Science – Woodstock, Vermont Rapture Center, 27023 Church Hill Road, Woodstock VT 05091-9642, Phone: (802) 457-2779; Fax: (802) 457-1053.

Sustaining our Soils and Society

. . . the booklet, Sustaining Our Soils and Society, and the colorful poster, Soils Sustain Life, offer new tools for raising awareness and understanding of our soil resources. The 64-page full-color booklet contains a copy of the poster which includes a student activity on the back. **CONTACT:** American Geological Institute, 4220 King Street, Alexandria, VA 22302-1502 or order online at www.agiweb.org ISBN 0-922152-50-0.

Groundwater Primer for Virginia

. . . excellent resource for educating about Virginia's groundwater. **CONTACT:** Virginia Water Resources Research Center, 10 Sandy Hall (0444), Virginia Tech - Blacksburg, VA 24061, Phone: (540) 231-5624 - FAX: (540) 231-6673 E-mail: water@vt.edu. Cost: \$ 8.

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Soil Biology Primer

... Get the Dirt on Soil Biology . . . The Soil Biology Primer, a 4-color, 48-page publication, introduces the reader to the living component of soil and how that component contributes to agricultural productivity and to air and water quality. It's an excellent resource for gardeners, farmers, ranchers, ag professionals, resource specialists, conservationists, soil scientists, students, and educators. The Primer includes information on the soil food web—the community of organisms living in soil—and how the web relates to soil health. **CONTACT:** the Soil and Water Conservation Society, www.swcs.org; pubs@swcsorg; or (800) THE-SOIL, ext 10.

Sharing Nature with Children, Volume I & II

... Volume I contains 50 fascinating games for children of all ages. Volume II includes eighteen new nature activities, as well as the remarkable technique of Flow Learning. **CONTACT:** Order online at www.sharingnature.com or 866-693-4263. Cost: \$ 9.95 per volume

Conceptual Encounters

... an introduction to earth education leadership techniques and a full script written in a "you are there" style, plus a complete set of photo-ready duplication masters all in a sturdy loose leaf binder. **CONTACT:** The Institute for Earth Education, Cedar Cove, Greenville, West Virginia 24945, www.eartheducation.org Phone: (304) 832-6404; Fax: (304) 832-6077

Earthkeepers

... this book will give you the best picture of what a complete earth education program involves. And, even if you can't set up the complete Earthkeepers program, there are many activities you can use to build an earth education program in your own setting and situation. Earthkeepers includes over 100 pages of detailed instructions and guidelines, fully illustrated. **CONTACT:** The Institute for Earth Education, Cedar Cove, Greenville, West Virginia 24945, www.eartheducation.org Phone: (304) 832-6404; Fax: (304) 832-6077.

WOW! The Wonders of Wetlands

... an Educator's Guide for all ages. A Comprehensive guide for anyone teaching about wetlands. Features 330 pages of information and activities for grades K-12. Features discussions on how people have historically interacted with wetlands; how wetlands are defined; their global distribution; physical/hydrological, chemical, biological and socioeconomic benefits of wetlands; wetland plants, animals, and general ecology. Modern management options, including restoration, enhancement, and acquisition are covered along with a special section to help teachers organize field trips, prepare student checklists, and compile a basic wetlands sampling kit. Contains dozens of clearly written activities for the field and classroom with sections covering wetland definitions, wetland plant and animal communities, water quality and supply issues, soil factors, human factors, and suggestions for getting involved in wetland stewardship. This book offers a special appendix on creating a schoolyard wetland habitat. **CONTACT:** Acorn Naturalist, ITEM # WATER-1408. Phone: (800) 422-8886; Fax: (800) 452-2802 www.acornnaturalists.com

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Internet Links

Wildlife Habitat www.nwf.org/habitats

Science for Kids www.ars.usda.gov/is/kids

Woodsy Owl www.fs.fed.us/spf/woodsdy

Stanley Stat and Pie-Chart Pam www.usda.gov/nass/nasskids/kidpg.htm

Sammy Soil www.tx.nrcs.usda.gov/class/sammy.html

National 4-H www.4-h.org/

Rus the Surfing Squirrel www.usda.gov/rus/educate/ruskids.htm

Envirofun www.epa.state.il.us/kids

Explorer's Club www.epa.gov/kids

Find Jane Doe www.kdwp.state.ks.us/kids/JaneDoe/kids.html

More Ag Links www.usda.gov/nass/nasskids/aglinks2.htm

Clip Art for Teachers www.clipartforteachers.com

Soil-Smart Worm www.nhw.nrcs.usda.gov/CCS/squlnm/skworm.html

Environmental Media (videos, teacher's guides, etc) <http://www.envmedia.com/>

Acorn Naturalists (resources for the trail and classroom) <http://www.acorn-group.com/>

National Ag in the Classroom <http://www.agclassroom.org/>

Utah Ag in the Classroom <http://extension.usu.edu/AITC/index.html>

Virginia Ag in the Classroom <http://www.vafb.com/aitc.htm>

Adopt-A-Watershed <http://www.adopt-a-watershed.org/>

Kids in the Creek <http://www.bpa.gov/corporate/kr/ed/kidsinthecreek/homepage.htm>

Land and People: Finding a Balance <http://www.usgs.gov/education/learnweb/LandPeople/intro.html>

Project Food, Land and People <http://www.foodlandpeople.org/>

Science Outreach Learning <http://www.bpa.gov/Corporate/KR/ed/sold/homepage.shtml>

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National Wildlife Federation Animal Tracks Program <http://www.nwf.org/animaltracks/index.html>

Soda Bottle Hydrology from the U.S. Dept of Energy, <http://www.em.doe.gov/soda/>

Basic Groundwater Hydrology <http://www.issaquah.org/comorg/gwac/Hydro.htm>

The Dirt on Soil <http://school.discovery.com/schooladventures/soil/index.html>

Surfing the Net with Kids, Science Page <http://www.surfnetkids.com/directory/Science/>

Kids, Crops and Critters. www.agintheclassroom.org

Izaak Walton League of America <http://www.iwla.org/siteindx.htm>

Virginia Tech Outreach Home Page <http://www.outreach.vt.edu/links.htm>

The Learning Web <http://www.usgs.gov/education/othered.html>

This USGS natural resources educational resource for students has links to 50 great sites, including such topics as Acid Rain, Eruptions of Mt. St Helens: Past, Present and Future, Biology Kid's Corner, Kid's Butterfly Site, and Earthshots: satellite pictures of environmental change.

All About Water <http://www.wrc.wa.gov.au/public/waterfacts/index.html>

This site contains information, explanations, pictures and diagrams on such topics as Macro-invertebrates & Water Quality, River and Estuary Pollution and Living Wetlands. As it is an Australian site, it also includes topics relevant to that country.

Science Learning Network <http://www.sln.org/resources/index.html>

Links to information and activities for science students K-12, including such topics as migration of Monarch Butterflies, hurricanes, the dynamics of water, and energy concepts.

Water Related Web Sites <http://www.crwcd.gov/teacher/websites.html>

A collection of links on water (and other science topics) including Water Science for Schools, Science Gems (thousands of pages of curriculum and lesson aids materials for K-12), and Science Curriculum by teachers for teachers (materials for K-12).

What Tree is That? <http://www.treelink.org/whattree/index.htm>

A guide to identifying the more common trees of the eastern and central U.S.

NRCS Plant Database <http://plants.usda.gov/>

Information about plants, focusing on vascular plants, mosses, liverworts, hornworts, and lichens of the U.S. and its territories

Global Rivers Environmental Education Network (GREEN) www.earthforce.org