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Outreach News is published six times a year by the State Conservation Commission to assist Washington's 47 conservation districts with their education and outreach efforts.

Ideas and articles can be submitted to Susie Vanderburg: [susiev@scc.wa.gov](mailto:susiev@scc.wa.gov)

## Regional Envirothons Ready to Roll

Students throughout Washington are gearing up for their regional Envirothon events this spring. Besides brushing up on their knowledge of aquatic ecosystems, forestry, soils, and wildlife, students are also learning about this year's current issue, biodiversity, and practicing oral presentations. Winners of each regional event will compete at the State Envirothon, sponsored by Skagit CD, May 19-20, 2009 at Camp Lutherwood on Lake Samish. The following regional events will be held this spring:

Northwest: March 26, Mercer Slough Environmental Center, Bellevue

South Sound: Information will be posted at [www.waenvirothon.org](http://www.waenvirothon.org).

Southwest: March 26, Rosburg School, Rosburg

North Central: April 22, Daroga State Park, Orondo

Northeast: May 7, Camp Cowels, Newport

Southeast: Information will be posted at [www.waenvirothon.org](http://www.waenvirothon.org).



Students at the Southwest Envirothon, 2008, huddle over a test on a frosty day.

## Poster Contests Underway

A number of districts are hosting local poster contests this year as part of NACD's annual competition. This year's theme, "Dig It: The Secrets of Soil," is inspired by the outstanding soil exhibit now showing at the Smithsonian Institute in DC. Next year, from May to September of 2010, this extraordinary exhibit will come to the Pacific Science Center here in our State, and the winning posters from our 2009 contests will be displayed at the Science Center!



Winners of Skagit CD's 2008 poster contest received awards from County Commissioners.



If your district is hosting a local poster contest, please submit winning entries to WSCC for the state-level contest by May 31, 2009. Visit [www.scc.wa.gov](http://www.scc.wa.gov) and click on the "Dig It" button to download the official entry form, rules, and other resources for hosting a regional contest.

The 5,000 square-foot Smithsonian Exhibit reveals the complex world of soil via interactive displays, hands-on models, videos, and much more. Find out more about the Smithsonian Exhibit at <http://forces.si.edu/soils/index.html>.

## District Ideas and News



Ron Nichols will again provide an outstanding session on taking great photos to tell the "conservation story."

### WADE I&E Track Shaping up for June

The annual workshop sponsored by the Washington Association of District Employees (WADE) will be held June 15-17, 2009 in Leavenworth. The Information and Education Track will be offering the following sessions:

- The Conservation District Role in Emergency Preparedness
- Horses for Clean Water (a joint session with the Livestock track)
- Native Plant Landscaping and Backyard Wildlife Stewardship
- Social Networking: Modern Tools for Conservation Outreach
- Understanding the Umbrella of Community Engagement
- Low Impact Development Outreach (a joint session with the Water Quality track)
- Cultural Resources
- How to Take Excellent Photos (by Ron Nichols...back by popular demand!)

In addition, the keynote speaker, Nancy Lee, is a highly acclaimed Social Marketing consultant who gets rave reviews everywhere she presents her extremely useful information about how to bring about positive behavior changes. Nancy Lee has helped numerous groups design outreach campaigns that get people to adopt new behaviors like using lifejackets, picking up dog waste, and conserving water, to mention a few.



### Sixth Grade Essay Contest Held in Adams CD

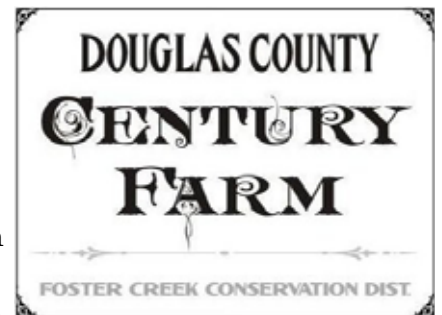
Every year Adams CD invites the sixth grade students of Ritzville, Lind, Washtucna and Bengie to participate in an essay contest. In the past, an employee of NRCS has presented the topic to the students, but this year Niki Young, Adams CD Resource Technician, created a PowerPoint presentation and went to the schools to explain how the contest works. The latest essay topic was: "My role in the environment is important." Students picked an aspect of the environment, living or inanimate, to research and then wrote about its role and how it functions as part of the biodiversity of Adams County. Adams CD Board members recently judged the essays; visit [www.scc.wa.gov](http://www.scc.wa.gov) to read the three overall winners.

For more information, contact Niki: [adamcd@ritzcom.net](mailto:adamcd@ritzcom.net).

Students in Adams County are prepped by Niki Young for the annual essay contest sponsored by Adams CD.

### Heritage Homestead Program Honors Douglas County Landowners

The Foster Creek Conservation District in partnership with the Douglas County Commissioners has begun recognizing families that have 100-year ties to land within Douglas County. The new Heritage Homestead program recognizes those farm and ranch families with century-long connections to the land whether or not they are actively farming or ranching today. Successful applicants will receive a decorative Heritage Homestead certificate signed by the Douglas County Commissioners and a metal sign suitable for hanging. For more information, visit <http://www.fostercreek.net/>.



## District Ideas and News (continued)

### POCD Helps 7<sup>th</sup> Graders Stencil Storm Drains

Thanks to Pend Oreille CD, 7th Graders in Newport are given an opportunity to do something to prevent pollution and protect clean water by stenciling messages on the street next to storm drains. Students also learn about urban storm water runoff as it relates to water quality. The project is being coordinated with the City of Newport which donates the special paint approved for road-type applications.



### SCCD's Direct Seed Mentoring Program Starting Soon

(Reprinted from Spokane County CD's newsletter, *In Touch With Conservation*.)

In an effort to increase the adoption of direct seed operations in the region, the Spokane County Conservation District is launching the Direct Seed Mentoring Program, as part of the Ag Pilot's project. The program will partner novice producers with experienced direct seed mentors. The mentoring program will include on-farm demonstrations of direct seeding and the study of a side-by-side comparison with conventionally tilled ground. Taking place in Spokane and Whitman counties, the program aims to show the benefits of direct seeding versus conventional tillage systems. Those benefits include:



- Fewer passes over the field
- Increased production and profitability
- Reduced soil erosion
- Improved water quality
- Improved soil tilth
- Improved air quality

The mentors will provide education, as well as custom seeding using their own equipment. They will be compensated by a grant from the Washington State Governor's Office. Mentors are paid for:

- Providing custom seeding services (\$25 per acre plus equipment hauling)
- Consulting with producers new to direct seeding (\$50 per hour)

By utilizing the knowledge and experience of their mentor, the producers are afforded the best opportunity for success. The program will also allow the farmers to try out a piece of equipment before investing in it. Mentors are sought based in part on providing the participating farmer with a choice of direct seed equipment; this will also allow for some comparison of crop yield, soil quality, and other factors between the different equipment. Participating producers will select their mentor from among those signed up for the project, and will be asked to implement, with the help of the mentor, a side-by-side 50-100 acre direct seed trial on their farm.

An Agriculture Economist from Washington State University (WSU) will analyze the economics of both the conventional and the direct seed operations. There will also be tours involving other producers, professionals, lenders, and farmers to help increase the knowledge about direct seeding. While the District will be handling the overall project management, it will partner with WSU, the Pacific Northwest Direct Seed Association, and the Spokane County Extension Office. For more information, contact Ty Meyer: [ty-meyer@sccd.org](mailto:ty-meyer@sccd.org).

## Education & Outreach Resources

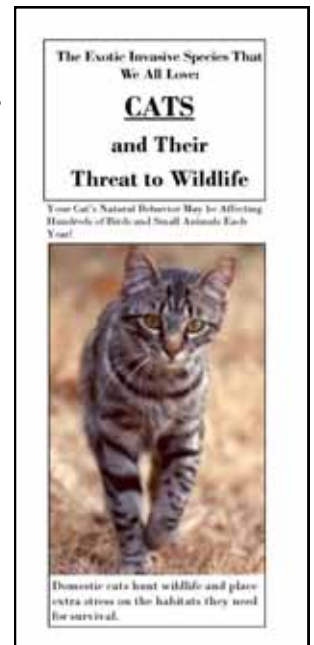


### Pierce CD Offers Rain Garden Classes

The Pierce Conservation District and its partners began offering a “Rain Gardens – The Key to Managing Drainage and Protecting Puget Sound” class in February. Workshop participants and volunteers are invited to learn more by participating in an actual rain garden installation workshop to be scheduled later in the spring. Participants received the new poster designed by north-west artist John Pitcher showing how a rain garden can be incorporated into yards and landscapes. The poster is sold by Good Nature Publishing: [www.goodnaturepublishing.com](http://www.goodnaturepublishing.com).

### Thurston CD Distributes Cat Brochure

Thurston CD’s “Cat” brochure, developed by Adam Sant, lists many health and safety reasons for keeping cats indoors. An additional reason is to prevent cats from preying on wildlife. While loss of wildlife habitat due to human activities is the leading cause of declining bird populations, scientists now list invasive species, including cats, as the second most serious threat to bird populations worldwide ([www.abcbirds.org](http://www.abcbirds.org).) TCD distributes this informational brochure at all their workshops and events.



### Soil Surveys Go High-Tech

(Excerpted from Skagit CD’s website)

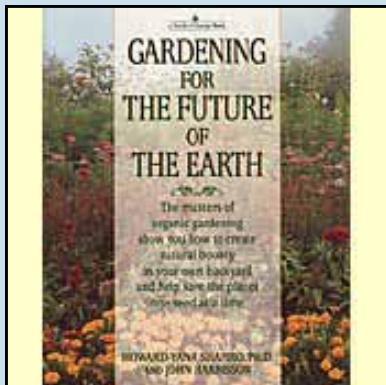
Traditionally, Soil Surveys have been available in a hard copy format only. Now, all soil survey information is available on the web via the Web Soil Survey, providing users with access to the largest natural resource information system in the world. Users are able to print maps and tables based on the area of interest they choose and the information they need. Users have access to all the information previously published in a traditional soil survey, but can also choose to download only the information they want. Visit <http://websoilsurvey.nrcs.usda.gov> to review the three basic steps for using the survey.



## Education and Outreach Resources (continued)

### Gardening for the Future of the Earth: A Book Review

by Lois Ruskell, Snohomish CD Public Outreach Coordinator



The book, *Gardening for the Future of the Earth*, by Howard-Yana Shapiro, PH.D and John Harrison, highlights seven of the world's most remarkable garden/permaculture practitioners and outlines actions that you can take in your own garden, yard, or even windowsill, to effect positive change. This book illustrates how we can preserve the bounty of our planet while creating our own version of paradise in our backyards, gardens, and neighborhoods. Highlighted master gardeners include:

**John Jeavons** is a master in “growing soil.” He thoroughly researched the smallest practical area for growing enough food for one person. Jeavons began in the 1970's, determined to grow all of his food, clothing and building materials, and produce an income, on a small amount of ground. He called it the ‘miniaturization of agriculture’, developed by the Chinese thousands of years ago. His system, if used properly, has the capacity to build soil up sixty times faster than occurs naturally. He typically has yields two to six times the US average while using 67 – 88 percent less water, 50 percent less organic fertilizer, and 99 percent less energy per pound of food produced. Jeavons also wrote the book *How to Grow More Fruit and Vegetables*.

***“Building soil is the foundation to sustainable gardening, as opposed to gardening nutrients from the soil that are never replaced.”***

**Bill Mollison** is widely regarded as the creator of “Permaculture,” or permanent agriculture. He was born and raised in Tasmania and began developing permaculture when he started to see key elements of the ecosystem around him disappearing. At the heart of the permaculture system is the strategic placement of trees, crops, plants, and livestock, carefully designed building layout, and effective water catchment and irrigation systems.

***“Permaculture is predicated on working with nature rather than trying to subjugate it, and the key to achieving this is to observe the way in which nature works.”***

**Alan York** is a viticulturist, orchard farmer, and former president of the Biodynamic Farming and Gardening Association. His philosophy is based on simplicity: Understand the growth habits of trees and vines and then do the minimum necessary to help them maximize production. York studied under Alan Chadwick, the legendary British guru of biodynamic agriculture who was responsible for developing the well-known student garden at the University of California campus at Santa Cruz. The UC gardens had once been four acres of poor clay soil. Using biointensive organic techniques, these four acres became a miniature paradise producing four times the yields of commercial agriculture. York developed a 21-acre northern California property into an extraordinary fruit orchard and vineyard. His techniques have been widely adopted by grape producers.

***“Sustainable gardening must regenerate and nurture the soil, and healthy bodies, minds, and spirits depend on healthy soils for sustenance and well-being. York's view is that we as individuals must take it upon ourselves to achieve this balance.”***

## Cool Schools Take Action on Climate Change

By Rhonda Hunter, Washington Department of Ecology

Students and teachers are stepping up to the challenge of climate change. All around the state students are challenging their teachers to reduce classroom greenhouse gas emissions with energy, waste and transportation audits followed by conservation pledges. And it's working! Twenty seven schools have already reduced tons of carbon and they are saving money in the process. Redmond High School saved \$7,500 just in the first year.



The Cool School Challenge program was developed in collaboration by Redmond High School environmental science teacher Mike Town, the Puget Sound Clean Air Agency, and Puget Sound Energy. Conceptually modeled after the U.S. Mayor's Climate Protection Agreement, the Cool School Challenge aims to motivate students, teachers, and school districts to reduce carbon dioxide and other greenhouse gas emissions school-wide.

In partnership with the Department of Ecology, facilitators all around the state have been trained to help teachers and their students use the Cool School Challenge to help lead the way and take action on climate change. Facilitators work for nature centers, government agencies, and even conservation districts. Kara Kaelber at Franklin Conservation District plans to lead several teacher workshops this fall depending upon grant funding. For more information on the Cool School Challenge, visit the website at <http://www.coolschoolchallenge.org/>.

## Apply April 1 for Sustainable Practices Award



The Washington Department of Ecology is seeking applications for the 2009 Governor's Award for Sustainable Practices. Businesses, including farms, and government agencies, schools, and organizations may apply from April 1 through June 5.

The competition is open to any Washington facility in good standing with environmental regulations. Ecology is particularly interested in efforts to reduce or stop the use of hazardous materials, prevent waste, pollution, and emissions, and conserve resources and energy. The application form, guidelines, and information about past winners will be available April 1 at: <http://www.ecy.wa.gov/programs/hwtr/GovAward/index.html> Or you can call Mariann Cook Andrews, award coordinator, at 360-407-6740.

## Heritage Barn Register has April 3 Due Date

Created with the passage of Substitute HB 2115 in May of 2007, the Washington Heritage Barn Register commemorates barns as historically significant resources representing the agricultural, economic, and cultural development of the State of Washington.



To be eligible for listing in the new Heritage Barn Register, barns must be over 50 years old and retain a significant degree of historic and architectural integrity. Owners interested in seeking designation for their historic barns are asked to complete a nomination form and provide basic information about the property. The fifth round of Heritage Barn nominations are due April 3, 2009. For more information, visit <http://www.dahp.wa.gov/pages/HistoricSites/HeritageBarnRegister.htm>.

# Research Suggests Education Leads to Behavior Change

By Susie Vanderburg, WSCC Education and Outreach Coordinator

Several people have asked for help finding studies supporting the idea that education leads to behavior change. Citing these studies will hopefully be useful in grant applications. This article contains several summaries of what I've been able to find via the internet and in college library searches. If you'd like to see the rest of the summaries, please send an email to: [susiev@scc.wa.gov](mailto:susiev@scc.wa.gov).

Researching for this article reminded me of time spent in a statistics class a (long) while back. I remember a professor warning all of us that we need to be careful how we report research findings. Here is the gist of what he had to say:

(1) We should always use phrases like, "research suggests" rather than "research shows" or "research confirms." The conclusions from any single, small study cannot be generalized and applied to broader situations. (Just because a group of people in a suburb in Boston recycled 20% more after a mass media campaign doesn't prove that rural residents in Washington will pick up their dog's waste after a similar media campaign.)

(2) Studies showing a correlation between two variables do not prove cause and effect. (A study showing a high correlation between milk drinkers and ministers does not mean that drinking milk will cause one to become a minister.) In order to show cause and effect, a study needs to have at least two groups, one receiving "treatment" (in our case, "education") and the other a control group receiving no treatment. (The study should also control for as many other influencing variables as possible.)

Unfortunately, I could find only four controlled studies, however I think those studies plus the two meta-analyses and six project summaries (with surveyed results) that I found may be helpful to support the argument that education can indeed result in behavior changes. Here are five of those ten studies, the first one being a Meta-analysis:

**Title:**

Meta-analysis of the Responsible Environmental Behavior Literature.

**Author(s):**

Osbaldiston, Richard, U Missouri - Columbia, US

**Source:**

*Dissertation Abstracts International*: The Sciences and Engineering, Vol 65(8-B), 2005.

**Abstract:**

This research project evaluates and synthesizes the literature on responsible environmental behaviors (REB). The results are based on a data set of 133 effect sizes computed from 62 studies reported over the last 20 years in the published literature. Four theories (Hines, et al. 1987; Hornik et al., 1995; Stern, 2000; and self-determination theory, Deci & Ryan, 2000) of behavior change were evaluated. The results showed that all four theories have some predictive value, but there is still much unexplained variation. Ten treatments that were used to promote REB were also examined, and *making a commitment and goal setting were the most effective treatments*.

**Comment:** This may be good support for a proposal to do a pledge campaign. And, what about farm planning? Is that a form of goal setting?

## Research Summaries (continued from page 7)

### Controlled Studies

**Title:**

Goal Setting for Sustainability: A New Method of Environmental Education

**Author(s):**

Sheegy, Lucy Ann

**Source:**

Australasian Digital Theses Program, 2006

**Abstract:**

The purpose of this research was to investigate the potential of goal setting to be used in environmental education programs to develop the skills and motivation required to change environmental behavior (specifically, residential sustainable behaviors identified in the Living Smart Program) and create positive environmental outcomes. Goal setting is one of the most replicable and reliable of psychology theories, with extensive evidence of its benefits for increasing performance and changing behavior. A control group that received the same environmental information as the Living Smart group, but no goal setting skills, only increased their environmental knowledge but made no significant changes in behaviors. The groups that set goals reduced their energy consumption by an additional 5% compared to the corresponding control groups and maintained those savings for a significantly longer period of time. *In conclusion, the goal setting process and framework created effective behavior change that was maintained longer than when goal setting is not used.*

**Comment:** More support for the idea of a pledge campaign.

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**Title:**

Impacts of Extension Education on Improving Residential Stormwater Quality: Monitoring Results

**Author(s):**

Dietz, Michael, et. al.

**Source:**

*Journal of Extension*, December, 2002

**Abstract:**

A paired watershed study in which the treatment group received one-on-one site assessment visits from trained volunteers who recommended BMPs such as redirecting stormwater; applying fertilizer based on soil test results; leaving grass clippings on the lawn; and properly disposing pet waste. *Results: the concentration of NO<sub>3</sub>-N in stormwater runoff significantly decreased by 60% in the treatment watershed following education. After (educational) treatment, bacterial concentrations in stormwater from the treatment watershed decreased by 26%.*

**Comment:** This is the strongest study I've run across for showing education's positive impact on behavior change and the resulting (measured) benefits to the environment.

## Research Summaries (continued from page 8)

### Project Summaries (with surveyed results)

**Title:**

Horses for Clean Water

**Author(s):**

Blickle, Alayne

**Source:**

*Serving Puget Sound with PIE: 1997-2003 Success Stories*

**Abstract:**

More than 345 horse owners attended workshops or farm tours that promoted farm management practices such as installation of gutters and downspouts, a manure management program, and manure composting. A survey of participants showed that 94 percent of respondents made at least one of these changes; 85 percent made at least two changes; and 74 percent made at least three changes to their property as a result of the training.

**Comment:** Not a research study, but did measure behavior change resulting from education project.

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**Title:**

Neuse (River) Education Team (NET)

**Author:**

Osmond, Deanna

**Source:**

*National Water Program*, a partnership of USDA, CSREES, and the Land Grant System: [www.usawaterquality.org](http://www.usawaterquality.org), 2002

**Abstract:**

The NET informed citizens, farmers, agencies, officials, and industry on how they could achieve five-year nitrogen reduction goals. NET used fact sheets, "Neuse-letters," trainings, and the writing of nutrient management plans. Results included: more than 105,000 acres now under nutrient management plans and a 23% reduction in the amount of fertilizer nitrogen applied per acre of cropland.

**Comment:** Not a research study, but did measure behavior change results of outreach efforts.

## Outreach Ideas from around the Nation



### Oregon CD Co-Sponsors Grain Workshop

The Wasco County Soil and Water CD and its partners sponsored a Mid Columbia Small Grains Technology Workshop at the end of last year in The Dalles. The workshop focused on tailoring new technologies for individual farm needs; spray application technology; calculating real fertilizer needs; use of electrical conductivity technologies; and yield mapping.

### Connecticut CD Expands Outreach to Energy Conservation

The Northwest Conservation District has taken a lead in spreading the gospel of Smart Growth -- the idea of clustering development on places where there is the infrastructure to support it, rather than letting sprawl continue unabated. In addition, the District is now taking on another job -- giving towns and individuals ways to get greener in their energy use, with a program called Conn-Vert. Said the district's executive director, "We could not ignore energy. We're not abandoning our traditional work with soil and water conservation. But energy is such a critical issue because conserving energy, and bolstering the use of alternative energy, are linked directly to combatting global warming which has the potential to change soil and water in ways we can't imagine right now."



### Colorado CD Partners with "Teens on the Farm"



Delta CD recently partnered with "Teens on the Farm," a program created to connect youth with Colorado's farmers for mutual benefit. The mission is to provide confidence and leadership skills to youth by building a team of youth to serve small family farms throughout the summer. Teens are introduced to the rich variety of farming operations, while life skills are developed in the area of communication, work ethic, and appreciation for sustainable systems. Find out more at Delta CD's website: [www.deltacd.net](http://www.deltacd.net).

### California RCD Joins Carbon Sequestration Research

As part of the West Coast Regional Carbon Sequestration Partnership ([WESTCARB](http://WESTCARB)), the Western Shasta Resource Conservation District is in partnership with the non-profit organization [Winrock International](http://Winrock International) to implement a research project involving carbon sequestration. Carbon sequestration, simply put, is the capture and storage of the greenhouse gas, carbon dioxide. The WESTCARB Team is made up of more than 80 organizations, public agencies, private companies and nonprofits and is working toward the goal of identifying and testing opportunities to keep CO<sub>2</sub> out of the atmosphere, thereby reducing humankind's impact on the climate.



Shasta County has been identified as an area capable of cost-effective carbon sequestration, and the district is actively involved in validating the science behind the idea. Sequestration options being investigated for Shasta County include conversion of marginal rangelands to forests (afforestation), improved management of hazardous fuels to reduce wildfires and their emissions, biomass energy, and forest management. The projects will benefit agriculture, ranching, and timber management and provide safety to local communities.