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In this Issue:

Clouds rolling in to enshroud a mountain vista as seen from Lake Dillon, CO.

~ Photo by Bruce Zander

Colorado Source Water Assessment and Protection Project Summary/Funding Opportunity

~ John M. Duggan, Colorado Department of Public Health and the Environment

Colorado Source Water Assessment and Protection (SWAP) is a new project designed to provide the public consumer with information about their untreated drinking water, as well as provide individuals and communities with a way to get involved in protecting drinking water quality. The program encourages community-based protection and preventive management strategies to ensure that all public drinking-water resources are kept safe from future contamination.

The Water Quality Control Division (Division) completed the initial source water assessment reports for over 1,700

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public water systems in November, 2004. The results can be reviewed at: **http://www.cdphe.state.co.us/wq/sw/SWAP/swapreports.html**

The SWAP Project is transitioning from the assessment phase to the protection planning phase. The long-term project goal is voluntary development and implementation of local source water protection statewide. The success of the program will require a coordinated effort between the Division and local interests, such as public water systems, interested stakeholders, and local governments.

The role of the Division is to assist local protection planning efforts by supplying the lead protection entity with the necessary consultation and tools to complete a protection plan. The Division has formulated a template that standardizes the protection plan format. The user-friendly template was developed to accommodate the needs of a broad size range of public water systems. It is also available on the SWAP website at **http://www.cdphe.state.co.us/wq/sw/protectionplanningtemplate.html**

Funding for protection planning is available from the State Drinking Water Revolving Fund (SDWRF) set-asides. The set-asides enable the SWAP program to provide financial support for protection plan development. The grant funds will be awarded for two types of projects: Pilot Planning Projects and Development and Implementation Projects.
Pilot Planning Project Grants will support exemplary and comprehensive source water protection plans. These grants can range up to $50,000 and will require a one-to-one financial match (cash or in-kind match). The Pilot Planning grants will also require the protection planning entity to evaluate the expenses related to replacing the current water source (acquiring water rights, restructuring water supply system, economic impacts, etc.). This additional cost analysis will provide an estimated value of water resources to reinforce and quantify the importance and significance of source water protection planning.

Development and Implementation Grants up to $5,000 will be awarded to public water systems and representative stakeholders committed to developing a source water protection plan. Proposals are accepted throughout the year. Grant awards are subject to the availability of SDWRF set-aside funds.

For more details on grant requirements, guidance and access to the electronic grant application please visit the SWAP website at: **http://www.cdphe.state.co.us/wq/sw/swaphom.html**

In addition, the Division has developed a source water protection planning DVD/CD toolkit to assist in developing a protection plan. To get a free copy of the DVD/CD toolkit, email your contact information (include mailing address) to **cdphe.wqswap@state.co.us**

If you have questions, please contact John Duggan, SWAP Program Coordinator, Outreach and Assistance Unit, Water Quality Control Division at **john.duggan@state.co.us** or call (303) 692-3534

Colorado Watershed Network Water Education Program

~ Jo Scarbeary, Colorado Watershed Network

Colorado needs a water education program; one that puts education first and prepares students to do real science, resource management, conservation and restoration. Furthermore, Coloradoans deserve to have one of the best K-12 programs in the country because our water resources and how we manage them are so unique. We provide water to nineteen other states and we are the only true headwaters state in the continental U.S. Water is transferred between basins throughout the state, and water quality and land use issues are an increasing concern due to population growth.

Colorado Watershed Network (CWN) has worked with students for a long time through River Watch (**http://wildlife.state.co.us/riverwatch/**). A River Watch teacher once told me River Watch is great because it is "*real science, done by real kids, for a real local purpose*." But we all know that doing real science -- science that is credible enough that it's used by the State Water Quality Control Division, the Division of Wildlife, and many others -- is very hard work. It takes a teacher or volunteer with a passion and understanding of water issues to coordinate the monthly trek to the sampling site. But how do we create a framework to provide for that level of understanding?

The most well-respected water curriculum is Project WET (Water Education for Teachers). According to a 1999 survey, over 95% of teachers felt Project WET had a positive impact on students' interest in

water issues. In Colorado, this program was coordinated by the generous volunteer time of Gerry Saunders and Teresa Higgins, both professors at the University of Northern Colorado. Thanks to the support of our partners, the Colorado Water Conservation

Board awarded CWN a grant to spearhead water education throughout the state, using Project WET as the cornerstone of the program.

As CWN's newly hired Education Coordinator, I will tap into the wealth of resources provided by the 163 facilitators already trained in Project WET throughout the state. These facilitators organize and conduct teacher training workshops. It will be our job to help assist them and provide information for more detailed trainings, such as working with the "Discover a Watershed" series. We are also starting a K-12 Water Education Taskforce. If you are interested in helping offer scholarships to support K-12 water education, or in becoming a partner, facilitator or a member of the committee, contact me at **Jo.Scarbeary@coloradowatershed.org** , call (303) 291-7601, or visit **www.coloradowatershed.org**

EPA Relocates Its Denver Headquarters

~ Greg Davis, EPA Region 8

During the month of January, 2007, EPA Region 8 relocated its Denver office to a newly constructed building at 1595 Wynkoop Street. This new Regional Headquarters is the result of a collaborative effort between the U.S. General Services Administration, EPA Region 8, and the lead builder, Opus NW, and is designed to reduce natural resource consumption and serve as a model for sustainable development. EPA anticipates that this building will meet the LEED (**Leadership in Energy and Environmental Design**) Gold Certification requirements for new construction. In partnering to create a new office space for 750 employees and contractors, EPA worked to create a building which serves as a development model in terms of its sustainable construction, pollution reductions, energy performance, indoor environment and long-term cost effectiveness.

Sustainable Development and Resource Conservation

EPA placed a significant emphasis on designing a building that both consumed a minimum of natural resources during construction and conserved natural resources through efficient design and use of renewable resources.

Sails deflect light into the interior core of EPA's Denver headquarters to maximize natural lighting, in order to reduce energy consumption and increase worker productivity.

~ Photo by Greg Davis, EPA Region 8

- Sustainable materials and manufactured products used include corn-based fabrics and wheatboard in workstation walls and surfaces, recycled content in modular carpet and chairs, cork floors, and bamboo paneling.
- Structure contains recycled steel and concrete with 25% ash content captured from coal-fired power plants.
- High efficiency and waterless plumbing features reduce water consumption by 50%
- 100% of power is generated through wind power purchases and onsite photovoltaic panels
- 20,000 square feet of vegetated roof captures and treats storm water and reduces urban "heat island" effect and improves insulation

Indoor Environment

The indoor environment at EPA's Denver headquarters was designed to provide a healthy workplace for its employees. By specifically recognizing employee's needs in terms of natural light, ergonomics, and air quality, EPA committed to creating an environment which reduces sick-days and improves the comfort and productivity of all its employees.

- Building fins, sails, sun shelves and an open core design orients sun to direct significant daylight to

(Continued on page 4)

75% of work spaces
- An under-floor air distribution system supplies air efficiency and enhances the air exchange rate for the building
- All building materials were selected to ensure the lowest potential for emission of volatile organic compounds
- An integrated Pest Management and Housekeeping Program eliminates the use of potentially toxic materials in the building

For more information visit, the EPA Region 8 web site at: **www.epa.gov/region8/about/newbldg.html**

Algae Speak . . . To Those Who Listen
~ Sarah Spaulding, US Geological Survey, Fort Collins Science Center

Algae, a group of organisms that photosynthesize, form the base of aquatic food webs in marine and freshwater habitats. In lakes and streams, algae may be green, slimy and smelly. Algae may be called "pond scum" or other names even more slanderous and derogatory. I, however, am a fan of the algae.

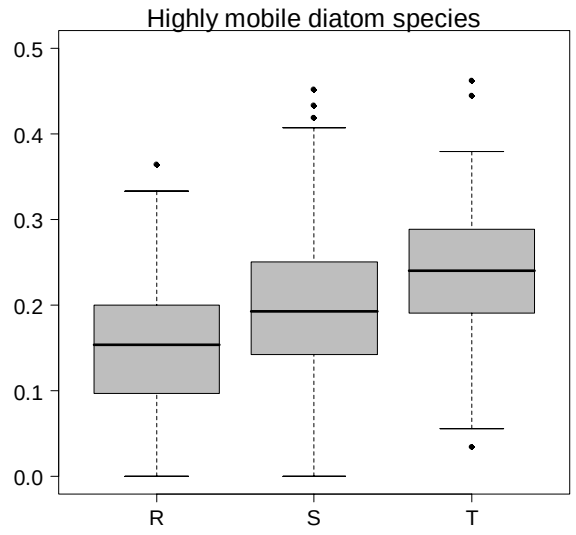
The first time I looked through a high-quality microscope (not those terrible one-eyed things in biology class, but a microscope with good optics and lighting), I gasped. What incredible delicate structures, what a range from simple to complex cells. What an entire world, hidden from everyday life. I decided there that I would study the algae for my life's work. It turned out that I was not the only fan of the algae, and I made connections with people around the world who were also entranced.

In the process of learning about algae, I found out that as early as 1900, people had discovered that algae were sensitive indicators of biotic condition. European rivers were heavily impacted by organic effluents and sedimentation. The species of algae that were able to grow in such rivers reflected that pollution. The "sabrobien system" was one of the earliest biotic indexes, and is a measure of the level of organic input.

Ruth Patrick, a pioneering scientist in the 1950's, was (and still is at 99) a fan of the diatoms. When she was young, her father told her that if she was very, very good, she could look through the microscope at diatoms. Patrick was the first in the U.S. to diagnose river health based on organisms, identifying the ecological relationships of how water quality affects different diatom species. She was instrumental in determining the impacts of point sources of pollution on diatoms, work that set the stage for eventual legislation to protect rivers and streams.

That early work is reflected in modern biological assessments and the ongoing efforts of EPA. Diatom species composition and abundance reflect the biotic condition of freshwater streams and lakes. Together with aquatic invertebrates and fish, diatoms are an indispensable component of federal (EPA Environmental Monitoring and Assessment Program (EMAP), USGS National Water Quality Assessment (NAWQA)) and state monitoring and assessment programs.

EPA advises state agencies to use multiple assemblages (algae, macroinvertebrates, and fish) in biological assessment of streams and wadeable rivers. Within EPA Region 8, all six states are working towards following EPA's recommendation to use more than one assemblage in bioassessment, and all are engaged in algal monitoring programs.



Graph showing a diatom metric used in the western EMAP pilot. The x axis shows the categories of sites based on land use and chemistry variables (R= reference, or least impacted, S = not categorized, and T = impacted). The y axis shows the total relative abundance of mobile diatom species. Species that are highly mobile are favored as sites have greater human influence. The metric is a measure of sedimentation; diatom species that are highly mobile are able to move, and escape being buried in sediments.

Here in Region 8, Karl Hermann and Tom Johnson are completing the regional report that will incorporate the goals of the 5-year western EMAP pilot (Stoddard et al. 2005). The project will include algae and:

- Report on the ecological condition of all perennial flowing streams and rivers
- Describe the ecological condition of western streams and rivers with direct measures of plants, fish and other aquatic life. Assessments of stream quality have historically relied solely on chemical analysis or sometimes on the status of game fish.
- Identify and rank the relative importance of chemical, physical and biological disturbances affecting stream and river condition

Encourage states to include these design and measurement tools as part of their state monitoring programs, so that future condition assessments will be ecologically and statistically comparable both regionally and nationally.

For more information, contact Sarah Spaulding at (303) 312-6212 or **sarah.spaulding@usgs.gov**

Watershed Plan Builder

The Environmental Protection Agency has released the Watershed Plan Builder, an interactive, Web-based tool to improve efforts by states and local communities in protecting and restoring local water resources. The tool will help local watershed organizations develop integrated watershed plans to meet state and EPA requirements and promote water quality improvements. Polluted runoff is the largest contributor to water quality problems nationwide.

Once the data are entered, the tool produces an outline of a comprehensive watershed plan tailored to a specific watershed. It features links to EPA, other federal agencies and state water programs. The Watershed Plan Builder walks the practitioner through various steps:

- Watershed monitoring and assessment;
- Community outreach;
- Selection and application of available models;
- Best management practices;
- Implementation; and
- Feedback

During the next six months, the Watershed Plan Builder will be available to watershed organizations, federal and state agencies, tribes, universities and local governments to beta test the application and provide feedback. A team of experts from EPA's water programs developed the tool, with input from state, tribal and local agency experts and other local watershed practitioners.

EPA hosted a Webcast on the Watershed Plan Builder on May 2, 2007. See:
http://www.epa.gov/watershedwebcasts/

For more information go to:
Watershed Plan Builder:
http://www.epa.gov/owow/watershedplanning/

Funding Opportunities

DOI Unveils New Healthy Lands Initiative

The Department of the Interior last week announced a new Healthy Lands Initiative in the 2008 administration budget. The initiative, developed to reflect the Administration's commitment to cooperative conservation, seeks to restore nearly 500,000 acres of land in seven western states. The President's 2008 budget requests an additional $15 million for the Bureau of Land Management to begin implementing landscape-scale projects targeted at habitat restoration, weed management, and improvement of riparian areas. Federal dollars are expected to leverage an additional $10 million of contributions from state, local, and tribal governments. For more information on the Healthy Lands Initiative, visit **http://www.blm.gov**

Conferences and Training

Sustaining Colorado's Watersheds Conference Oct. 2-4, 2007, Breckenridge, Colorado

This conference, ***Making the Water Quality Connections***, will explore the connections between water quality and land use, water supply, energy development, wildlife and other related issues. It will also feature information about emerging issues and recent developments in water quality monitoring. Sponsors include AWARE Colorado and the League of Women Voters of Colorado Education Fund, the Colorado Watershed Network, the Colorado Lakes and Reservoir Management Association, the Colorado Watershed Assembly and the Colorado Riparian Association. For more information, go to:
http://www.coloradowater.org/conference/ or contact Cynthia Peterson at 303-861-5195 or **cpeterson@awarecolorado.org**.

Publications and Web Resources

Private Land Conservation in U.S. Soars

Growing efforts to save privately owned farms, ranches and forests from industrial and residential development now preserve about as much open space each year as is lost to sprawl, according to a report out last week. The 2005 National Land Trust Census shows private land under protective trusts and easements now total 37 million acres, a 54 percent increase from the last count in 2000. Conservation of private land from 2000 to 2005 averaged 2.6 million acres a year according to the Land Trust Alliance. This means additional land protected each year exceeds the 2.2 million acres that USDA has estimated is converted annually to "developed land. The largest total acreage is in conservation easements, legal pacts between landowners and trusts or government agencies that permanently limit the land's use. The land census says easements have risen 148 percent since the last count. For more information or to view the full report, go to **http://www.lta.org/census/**.

Stormwater Webcasts

The first webcast of a series of six for municipal stormwater managers was held December 6, 2006. The webcast, was titled *Killing Two Birds with One Stone: Building a Local Program to Maintain Your Stormwater Practices and Prevent Pollution from Municipal Operations* was hosted by Tom Schueler of the Center for Watershed Protection.

This webcast discussed maintaining post-construction best management practices and municipal operations/good housekeeping. The webcast included a brief discussion of the requirements, examples of successful local programs, the top maintenance headaches faced by MS4s, and introduced new tools to help build a successful maintenance program. Check out his webcast and many others at:
http://www.epa.gov/npdes/training

New Stormwater Guide for Evaluating MS4 Programs

The U.S. Environmental Protection Agency's Office of Water published a new MS4 Evaluation Guide on their stormwater website at
http://cfpub.epa.gov/npdes/stormwater/munic.cfm

Available only on the web, the Guide is designed for use by NPDES authorities to evaluate the quality of Phase I and Phase II MS4 programs: for permit compliance, technical assistance and other purposes. It can be used for comprehensive program evaluations or for certain components of an MS4 program. MS4 program managers may also find it helpful as they evaluate their own programs. The document is being provided in Microsoft Word format so NPDES programs can modify it to meet the unique components of their programs such as those required by state regulations.

Key EPA Internet Tools for Watershed Management

EPA's Web sites include a wealth of information about the nation's waterbodies and this Webcast helps you learn how to access this information. Our information is housed in several 'national databases' and this Webcast demonstrates how to query, access and use the information. The Webcast showcases a number of the Internet tools that EPA has developed to support development of watershed plans, provide watershed training and help you get nuts and bolts information about your watershed.

While some of the online tools are straightforward and perform simple functions, others offer capability for multiple-step queries to report information. Using simple screen shots and step-by-step explanations, the Webcast explains how to do queries from some key EPA water-related databases, such as water quality standards, 303(d) listed impaired waters, assessed
waters, STORET (water quality monitoring information) and discharge monitoring reports from permitted dischargers. The session also provides instruction on using EnviroMapper. To view the archived webcast, go to:
www.epa.gov/watershedacademy

Impaired Waters

Check out your local waters on the National Assessment Database at:
http://www.epa.gov/waters/305b/index.html

For 2002 data or to see 2004 data go to:
http://www.epa.gov/waters/305b/index_2004.html

New Developments in STORET

EPA released the **Water Quality Exchange (WQX),** a new data transfer system that makes it easier for states, tribes and others to submit and share water quality monitoring data over the Internet. The release of WQX provides for the transfer of chemical and fish tissue data, and for physical parameters such as temperature. Also just released is a Web-based **Watershed Summary** tool designed to help water quality managers and the public use the information in the National STORET Data Warehouse. This tool allows users to create a summary of available data for an individual watershed. It shows the types of data available in the Warehouse for that watershed (such as metals, nutrients, or pesticides), who has entered the data, the period of record for the data, and how much data are available. The user can then download the specific data needed for that watershed. Visit **www.epa.gov/storet/** for more information on WQX and the Watershed Summary.

New DVD Released Highlighting Local Governments

EPA's Local Government Advisory Committee (LGAC) has developed a DVD that highlights how local governments are addressing aging sewer and water systems. Go to: **http://www.epa.gov/waterinfrastructure/lgac_video/**

Arsenic in your Drinking Water? Just the Facts for Consumers

EPA released a new fact sheet designed to help the public understand the long-term health risks associated with arsenic in drinking water. Water systems with arsenic problems can use this fact sheet as part of their public education efforts. To download the fact sheet, go to: **http://www.epa.gov/safewater/arsenic/**

National Academies Introduce Monthly Sustainability Update

The National Academies has just instituted a monthly update, Sustainability at the National Academies, highlighting activities relating to sustainable development from throughout the National Academies. Go to: **http://www.nationalacademies.org/sustainabilityroundtable**

King County GW Protection cartoon

Take a minute to watch the King County's, Washington ground water protection outreach video. Make sure you turn up the sound! **http://dnr.metrokc.gov/wlr/wq/groundwater-animation.htm**

Getting Your Feet Wet with Social Marketing: A Social Marketing Guide for Watershed Programs

This online resource, published by the Utah Department of Agriculture and Food, leads readers through the social marketing process using watershed examples and case studies from throughout the country. **www.ag.utah.gov/conservation/GettingYourFeetWet1.pdf**

Using NEMO - Nonpoint Source Education for Municipal Officials - to Advance Watershed Management

Webcast audio recording

Chet Arnold from the University of Connecticut's Center for Land Use Education and Research, John Rosum with the Connecticut Nonpoint Education for Municipal Officials (NEMO) Project and Dave Dickson with the National NEMO Network provide a thorough overview of the methods, impacts and educational offerings of the NEMO Program. They also discuss the National NEMO Network, an organization of 30 affiliated state and local educational programs. An archived audio recording of the Webcast can be accessed at **www.epa.gov/owow/watershed/wacademy/webcasts**.

New EPA Web Module Offers Watershed Outreach Training

EPA's Watershed Academy recently posted a free, updated online training module on "Getting In Step: A Guide to Conducting Watershed Outreach Campaigns." This module offers a tested step-by-step system to help local governments, watershed organizations and others maximize the effectiveness of public outreach campaigns to help solve nonpoint source pollution problems and protect local waterways. The module is based on EPA's free, downloadable outreach guide "Getting in Step: Guide for Conducting Watershed Outreach Campaigns." **www.epa.gov/watertraingettinginstep/**

Approximately 50 other free online Watershed Academy training modules are available at **http://www.epa.gov/watertrain/**

Real Estate Development Class

EPA Region 8 is offering a *free* 2-day training entitled **"Real Estate Development and Contaminated Sites: Achieving Success in Today's Regulatory Environment"** to be held June 20-21, 2007 in the *new* EPA Region 8 building in downtown Denver. This course is an in-depth opportunity to learn how to redevelop a contaminated property. It is open to State, Local, non profits and federal government staff. All participants must register by visiting **http://www.trainex.org/**

Type "Real Estate" in the search box to locate the course (the first on the list). For information contact **heffernan.daniel@epa.gov**

Household Water Well System Grants

The USDA Rural Development will award Household Water Well System (HWWS) grants to qualified private, nonprofit organizations to establish lending programs for household water wells. The deadline for application is May 31, 2007 for this year. The approved organizations must set up a revolving loan program and provide low-interest loans to eligible individuals who own or will own a private well system. **HWWS Grant Program Announcement**

"Now there is one outstandingly important fact regarding Spaceship Earth, and that is that no instruction book came with it."

~ R. Buckminster Fuller

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Natural News

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If you have an article concerning ecosystem protection, watersheds, wetlands or ground water, we would like to hear from you!

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