



Director's Update: BCWI Forming Water Quality Monitoring Stream Teams

By Paul Hempel, Executive Director of the Boulder Creek Watershed Initiative

Greetings Members and Friends of BCWI!

Dedicated to informing the community about water resource issues that affect the health of the Boulder Creek Watershed.

BCWI is a 501(c)3 non-profit.

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Paul Hempel

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This position is open.
Please volunteer!

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Sheila Murphy

Creek Clean-ups
Eric August

Newsletter
Ilan Kelman (last time)
(This position is open.
Please volunteer!)

The Boulder Creek Watershed Initiative is proud to announce the formation of volunteer water quality monitoring "StreamTeams" in various locations throughout Boulder County. Performing water quality monitoring with trained and certified volunteers was a major activity identified in BCWI's recently completed Boulder Creek Community Stewardship Plan.

Funding for a major portion of this project came via a \$10,000 grant awarded to BCWI by the Colorado Watershed Protection Fund.

The goal of these studies is to examine point source and non-point source impacts and how those impacts affect the water quality of Boulder Creek from Eldora, throughout the City of Boulder, and at other locations along Boulder Creek and its tributaries.

StreamTeam volunteers who have previous experience in water quality monitoring or other associated scientific monitoring efforts will be utilized. Beginners who want to learn the ins and outs of water quality monitoring are also welcome to participate.

Beginning in January 2008, BCWI will conduct volunteer training workshops and certification events. Announcements of the trainings will be published via the local media. At the initial trainings, StreamTeams will be given a specific site to monitor and training materials will be distributed. The overall goals of the project, sampling locations, dates, sampling procedures, and equipment used will be explained at this time.

Bi-monthly sampling will consist of six sampling events at ten sites for a total of 60 samples taken at selected sites along Boulder Creek and its tributaries (participants involved directly through the KICP water quality monitoring StreamTeam program will take quarterly samples). During the actual sampling events, qualified scientists from partner agencies and organizations to this project will supplement sampling where volunteer capacity may be insufficient.

Baseline constituents to be measured are flow, temperature, pH, dissolved oxygen, specific conductance, total organic carbon, and dissolved organic carbon.

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Past Forum: City Council Candidates



City Council Candidates respond to environmental questions (photo: Ilan Kelman)

On 25 September 2007, 21 of the 22 candidates for the seven vacant seats on Boulder City Council participated in the “Boulder Community Environmental Forum” at the Main Branch of the Boulder Public Library. The forum was moderated by the Colorado Environmental Coalition who teamed with nine other groups for this event: Boulder Audubon Society, Boulder Creek Watershed Initiative, Boulder Flycasters, Colorado Clean Energy Action - Boulder Chapter, Eco-Cycle, Friends of Boulder Open Space, PLAN Boulder County, Sierra Club, and the University of Colorado Environmental Center.

The seating order of the candidates was determined by drawing numbers. Each candidate was given two minutes to introduce themselves and their environmental interests.

Then, one environmental question was drawn at random from a list which had been emailed in advance to all candidates. The questions were set by the sponsoring environmental organizations. Each question was posed to two candidates who each had 90 seconds to answer.

The questions and answers covered topics such as water quality and resources, waste management, open space, development, climate change, and incentives for energy efficiency.

Finally, in the order opposite from the introductions, each candidate was permitted 90 seconds for closing remarks which could include addressing some of the questions which other candidates were asked.

Most of the candidates remained afterwards to chat in small groups or one-on-one with the more than 100 audience members.

On 7 November, the city voted. Congratulations to the winning candidates:

1. Ken Wilson, 9,772 votes, 10.4%
2. Crystal Gray, 9,374 votes, 10.0%
3. Susan Osborne, 9,105 votes, 9.7%
4. Angeliqe Espinoza, 8,274 votes, 8.8%
5. Lisa Morzel, 8,766 votes, 9.3%
6. Macon Cowles, 8,201 votes, 8.7%
7. Matt Appelbaum, 6,805 votes, 7.2%

We look forward to working with you on and for the Boulder Creek Watershed.

Past Forum: Engineers Without Borders



From left to right, David Dani, Christie Chatterley, and David Sparkman (photo: Ilan Kelman)

On 23 October 2007, three CU-Boulder environmental engineering graduate students presented their volunteer efforts with Engineers Without Borders. David Dani provided an overview of his time in isolated Namsaling, Nepal helping with a safe water plan. Next, David Sparkman described his work in San León, Peru, a town of about forty families, to create a potable water system and to improve water-related education and hygiene. Christie Chatterley closed the forum by detailing her experiences in rural Rwanda, where she contributed to projects including water treatment and improved cooking stoves. All three emphasized the challenges of development and the need for community involvement.

To volunteer with Engineers Without Borders, see <http://www.ewb-usa.org>

Get ready for the
**100th Boulder Creek
Watershed forum &
celebration!**

22 January 2008

**The Past and Future of the
Boulder Creek Watershed**

The Boulder Creek Watershed Forum series is sponsored by:

- Boulder Creek Watershed Initiative
- United States Geological Survey
- City of Boulder
- Boulder Public Library
- Moe's Broadway Bagels
<http://www.moesbroadwaybagel.com>
- Breadworks <http://www.breadworks.net>
- Caffe Solé <http://www.caffesole.com>

Missed a Boulder Creek Watershed Forum?

Videotapes of all forums are available at the Boulder Public Library and can be checked out for home viewing.

Forums are also televised on Channel 8:
Wednesday 3 PM
Saturday 10:30 AM
Sunday 8:30 PM

BCWI's Board of Directors Welcomes:

Jill Dreves

<http://www.wildbear.org>



Jill (furry) and son (scaly) at BCWI's Boulder Farmers Market booth (photo: Ilan Kelman).

Jill Dreves is founding Executive Director of Wild Bear Center for Nature Discovery. Wild Bear began by serving 24 children in the summer of 1995, and has grown to serve over 9,000 people in 2006. Wild Bear is known for high quality youth programs and for bringing the community together to make a difference. Jill believes that people who appreciate the natural world will act to preserve it.

Wild Bear was an integral partner with Boulder County and the Town of Nederland to preserve Mud Lake, 200 acres of land north of Nederland. In July 2000, Wild Bear organized 134 volunteers to remove over 30 tons of trash allowing Mud Lake to regenerate to its natural state. Now, Wild Bear is developing an off-grid high alpine nature center at the gateway of Mud Lake and Caribou Ranch Open Spaces, an ideal site for an all-ages educational center near Boulder Creek's headwaters.

Joe Ryan

<http://www.colorado.edu/ceae/environmental/ryan>

Joe Ryan is a Professor in the Department of Civil, Environmental, and Architectural Engineering at the University of Colorado at Boulder. His research focuses on the role of colloids and surfaces on the fate and transport of contaminants in natural waters. He teaches courses echoing these interests: Water Chemistry, Environmental Organic Chemistry, and Aquatic Surfaces and Particles.

He and his students have been assisting local watershed groups in dealing with problems associated with abandoned mines and off-road vehicles. As a member of the EPA's Lefthand Watershed Revitalization Team, he was a co-recipient of a U.S. Environmental Protection Agency National Notable Achievement Award in 2006. Joe, his wife Martha, and their children Odelia and Henry, live in the James Creek watershed in northwestern Boulder County.



Joe emerges from Coal Creek after sampling for insects (photo: Frannie Bui).

Autumn Creek Cleanup

By Eric August (BCWI's Creek Cleanup Coordinator) ericaugust@gmail.com



Volunteers picking up trash during the Creek Cleanup (photo: Sophia Floyd david.floyd@comcast.net)

On 6 October 2007, BCWI volunteers gathered on a beautiful autumn day for another cleanup along Boulder Creek. We had eleven CU students join us, bringing our total volunteer force up to fifteen. This large group enabled us to expand our normal cleanup section of the creek and the amount of trash removed. After meeting at Scott Carpenter Park we split up and starting cleaning sections both upstream and downstream of 30th Street. Some of us donned waders and worked within the creek channel while others worked along the streambanks. After a few hours, we had removed hundreds of pounds of trash from Foothills Parkway all the way up to Folsom Street.

This autumn cleanup was our fourth cleanup of the year. The previous three had focused on BCWI's adopted section of Boulder Creek, from 30th Street to Folsom Street. During this most recent cleanup, many of us noticed that our adopted section was relatively clean compared to the section downstream of 30th Street. This leads us to believe that our regular cleanups are having a lasting impact beyond a few weeks following our efforts. We hope to continue keeping our adopted section clean, as well as adjacent sections when our volunteer workforce allows. Although not scheduled at this point, our next cleanup will occur in early spring. We hope to see you there!

And please never litter!

Volunteer with BCWI!



BCWI Executive Director Paul Hempel seeks volunteers at the Boulder Farmers Market in August (photo: Ilan Kelman).

BCWI needs more people to join our team of volunteers. Opportunities include:

- Board of Directors, especially:
 1. From the agricultural community.
 2. From the arts and culture community.
 3. With marketing experience.
- Forums: Presenter line-up and forum production.
- Newsletter article writer, editor, and photographer.
- Accountant and bookkeeper.
- Working with local companies to raise funds and donations of products and services.
- General clerical duties.
- Coordinating internships via CU and Naropa.

BCWI also needs office space, equipment, and supplies to help us manage our projects!

THANKS for your continuing support!

Get to Know Your H₂O Free Water Presentations



We drink it, bathe in it, swim in it, flush it and more. Water is an integral part of our everyday lives. Learn more about where your water comes from, how much we use, and how you can protect and conserve this valuable resource. Schedule a FREE water presentation for your community or neighborhood group today!

phone 303-413-7385

email waterprograms@bouldercolorado.gov

visit <http://www.keepitcleanpartnership.org>

***Didymosphenia geminata* in Boulder Creek**

By Edward Lachendro edward.lachendro@colorado.edu

Didymosphenia geminata (didymo) is a species of diatom (a type of single-celled, photosynthetic microorganism, or algae) that produces abundant extracellular (that is, outside of the cell) stalk material attached to stream surfaces. These didymo mats can cover 100% of a stream bed and be as thick as 20 cm. Didymo was first recognized in Scotland, Sweden, and Finland in the late 19th century, and is widespread today, occurring in North America, Europe, Asia, and New Zealand.

When didymo becomes abundant, the physical and biological conditions of stream ecosystems are dramatically altered. Insect and fish species' diversity and population sizes can also decrease. Nuisance blooms are a problem because didymo competes for the same stream bed surfaces needed by other common species of algae, thereby disrupting natural ecological processes. This smothering effect eliminates valuable food sources for aquatic insects, which are a primary food source for fish and birds.

Didymo blooms are currently present in Boulder Creek and South Boulder Creek. One study at the University of Colorado was the first to monitor didymo during the spring and summer of 2006 in these streams. Though no strong relationship was identified between didymo coverage and major stream water nutrients, it was clear that didymo was present at every site that was sampled.

Didymo is capable of surviving more than 40 days out of water in moist environments or 2 days in dry environments. This makes it easy for nearby watersheds to be contaminated when even a small amount of didymo is introduced. Common transporters of didymo include waders, especially felt-sole waders, and boats. There are measures of disinfection that can be taken to prevent the spread of didymo. One common procedure is to check (for didymo), clean (with bleach or detergent), and dry. Further information about didymo can be found at <http://bcn.boulder.co.us/basin/bcwi>








Wading through Boulder Creek's streambed covered with bloom of the stalked diatom, *Didymosphenia geminata*, also known as didymo (photo: Sarah Spaulding)

Corporate and individual sponsors welcome!


YES! I will make a (tax-deductible) contribution to the Boulder Creek Watershed Initiative!

My level of support is (check one):

| | | | |
|---|--------------------|---------------------------|------------------------------------|
|  | _____ \$ 500 & up | Belted Kingfisher | <i>Ceryle alcyon</i> |
|  | _____ \$ 100 - 499 | Greenback Cutthroat Trout | <i>Oncorhynchus clarki stomias</i> |
|  | _____ \$ 50 - 99 | Tiger Salamander | <i>Ambystoma tigrinum</i> |
|  | _____ \$ 20 - 49 | Green Darner | <i>Anax junius</i> |
|  | _____ \$ 0 - 19 | Golden Stonefly | <i>Hesperoperla pacifica</i> |

Enclosed is my check for \$_____. The entire watershed thanks you.

BCWI also needs volunteers! Tasks include video editing, creek cleanup, and outreach events. To get involved, let us know your interests and how to reach you!



PO Box 18
Boulder, CO 80306
www.BASIN.org/BCWI

Director's Update: Stewardship Plan

Continued from page 1.

Additional funding will allow BCWI to study *E. coli* bacteria, boron, nitrate, phosphate, and a suite of emerging contaminants. BCWI will make data available on our website at <http://www.basin.org/bcwi>. A GIS database will also be created.

In addition to water quality monitoring, BCWI will offer two advanced water quality training sessions to each StreamTeam on a specific topic of their choice. Topics offered will include macroinvertebrate (aquatic insect) sampling, physical habitat evaluations, an overview of the federal Clean Water Act and the State of Colorado water quality standards, and an explanation of Colorado water law and water rights. Information gathered from this study will be disseminated to agency personnel, community leaders, businesses, organizations, and other concerned individuals via a year-end Stream Team Water Quality Report based on volunteer activities and data findings.

For more information contact Paul Hempel, BCWI Executive Director, at 303-437-1746 or bcwi@bcn.boulder.co.us.