



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.

PO Box 18  
Boulder, Colorado, USA  
80306-0018  
bcwi@bcn.boulder.co.us  
www.basin.org/BCWI

**Executive Director**  
Paul Hempel

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## **Director's Update:** **BCWI Launches Water Quality** **Monitoring Program!**

By Paul Hempel, Executive Director

### **Greetings!**

BCWI is proud to announce that our volunteer water quality monitoring Stream Team program is now in action! Five Stream Teams representing 30 volunteers have stepped forward to act as stewards of Boulder Creek and its tributaries. Stream Teams now have been trained in the following locations: Nederland (middle Boulder Creek in Eldora), Louisville (Coal Creek at Hwy 36) and Boulder (Skunk Creek, Four Mile Canyon Creek and South Boulder Creek).

Funding for this project was provided by the Colorado Watershed Protection Fund, Boulder County and the Community Foundation Serving Boulder County.

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 throughout Boulder County. BCWI and Keep It Clean Partnership, our partnering agency which also has formed 5 water quality monitoring Stream Teams, are supplementing water quality studies already being performed by local cities and towns, Boulder County and the State of Colorado. The United States Geological Survey (USGS) is providing technical support for this project.

Baseline constituents to be measured are flow, temperature, pH, dissolved oxygen, specific conductance, nitrate and phosphate.

Additional funding will allow BCWI to study e-coli bacteria and a suite of emerging contaminants.

The next step in this process will be the certification of Stream Teams. Volunteers will practice the skills they learned during training until they feel comfortable with sampling and analysis procedures and use of equipment. This is a mandatory quality control (QC) step. Once Stream Teams have been certified, they will begin sampling at their designated sites.

*Continued on page 9*

## Past Forums

By Charlotte Raby

### January 22, 2008: Effects of Biologically Active Consumer Product Chemicals by Dr. Larry Barber

The U.S. Geological Survey, Colorado University, and the City of Boulder have been actively involved in research on the occurrence, fate, and effects of inorganic and organic wastewater contaminants in the waters of the United States. A variety of chemicals have been widely detected in surface water and groundwater systems, that originate from consumer use of pharmaceutical and personal care products (PPCP) with subsequent down-the-drain disposal. Because many of the PPCP chemicals are designed for biological responses, their impact on aquatic ecosystems is of concern.

Exposure of aquatic life to low doses in treated water is chronic and multi-generational. Effluent from the 75th Street Waste Water Treatment Plant contains many endocrine disrupting compounds. These chemicals have decreased the reproductive ability in male and female white sucker fish in Boulder creek, which has decreased the number of eggs laid and hatchings from those eggs. They've also altered the female to male ratio to 5:1, from a relatively equal ratio from upstream of the effluent.

The city's new activated sludge treatment process is expected to reduce the quantity of estrogenic compounds in the effluent, the effects of which will be tested in the future. Also, the Pharmaceutical Take-Back Program, created through a partnership between Boulder's Water Quality and Environmental Services (WQES) and Partners for a Clean Environment (PACE), is expected to begin this Spring at Boulder Community Hospital. You can read more at: [http://www.bouldercolorado.gov/files/Utilities/WRAB/2007/december\\_17/agenda\\_11.pdf](http://www.bouldercolorado.gov/files/Utilities/WRAB/2007/december_17/agenda_11.pdf)

### February 26, 2008: Pete (Allison) Palmer, past president of the Institute for Cambrian Studies, Will Toor, Boulder County Commissioner, and Patty Limerick with the Center of the American West.

Ms. Palmers' talk: *Preserve Planet Earth: why bother?* reviewed the successions of understanding about our human context (often considered "heresies") over the past two centuries, which show that we are a fundamental part of the global ecosystem and must begin to move toward a sustainable future for the human enterprise. The first idea, initially considered heresy, was Copernicus', which stated that Earth was not the center of the universe. From there, other scientists discovered that Earth had an ancient geological history, and that living organisms have changed drastically over this geologic time, leading to the discovery of evolution, genes, and to today's most important idea: that planet Earth has a limited carrying capacity for humans, and a limited supply of resources. Read the full text at:

<http://www.rotaryclubone.org/articles/specials/Pete%20Palmer%20-%20Preserve%20Planet%20Earth%203.pdf>

Mr. Toor discussed the sustainability agenda for Boulder and Boulder County. In 2006, the Boulder County Consortium of Cities created the Energy Task Force, which researched and developed a county-wide Sustainable Energy Plan (SEP) that will help the county to meet green house gas emissions reduction goals. One of the goals was set by Colorado State Governor Bill Ritter Jr. in 2007, for the state's emissions to be reduced by 20% below 2005 levels by the year 2020, and by 80% by 2050. The SEP contains recommendations of voluntary and regulatory actions that will result in a cost savings of \$445 million, and a reduction to 40% below 2005 levels by 2020. Read the SEP at: <http://www.bouldercounty.org/sustain/pdf/SustainableEnergyPlan.pdf>

Ms. Limerick discussed sustainability within a historical perspective of settlement in the Boulder Creek watershed. Learn more about the Center of the West at <http://www.centerwest.org>

### **March 25, 2008: Potential Climate Change Impacts on Boulder Creek: Back to the Future**

Ken Strzepek, professor of Water Resources at CU Boulder, presented results of a recent NOAA funded study of climate change impacts on Boulder's Water System. Stratus Consulting of Boulder lead the study with inputs from the City of Boulder, AMEC Consultants of Boulder and the University of Colorado. The talk focused on how Boulder Creek responds to seasonal changes in precipitation and temperature, using a hydrologic model developed for Boulder Creek. The model was then used to estimate the impacts of Temperature and precipitation changes suggested by Global Climate Models for 2030 and 2070 using recent historical climate data.

### **April 22, 2008: Flood potential in the Boulder Creek Watershed.**

Speakers included Kevin Stewart from Urban Drainage, Sheila Murphy from the USGS, and Kenneth Strzepek and Anthony Powell from the University of Colorado.

This forum discussed the risk of flooding in the Boulder Creek Watershed, the blue dots which are visible around town and are part of a flood education project, and climate change impacts on future storms.

Average rainfall is staying the same, but with greater amounts in the rainy season, and less in off-seasons. By the year 2070, peak flow from snow melt will arrive one month earlier. With earlier snow melt, events of rain on snow will increase flooding. This will eventually have the effect of increasing frequency of the 100 -- and 500-year floods. By the year 2050, a typical 100 year flood (12000 cfs flow) will occur every 46

years, and every 24 years by 2100. A 500 year flood will occur every 110 years by 2050, and every 38 years by 2100. Today, we have a 2% chance/year of having a 100 year flood, as opposed to a 1% chance/year as in previous years. Climate changes have increased the amount of fires, which bakes containment walls of reservoirs, which magnifies flooding. Increases in insect populations, also due to climate changes, result in the destruction of plants and trees that have helped to moderate flooding.

A community based flood warning system has been put into place. Weather and flood predictions are given at [alert.udfcd.org](http://alert.udfcd.org). Historical data, maps, and real time data are also available at the site. It is hoped that in the future, the Boulder area will receive warnings of approaching flash floods, which may help save lives.

Citizens are encouraged to visit [boulderfloods.org](http://boulderfloods.org) to increase their flood awareness. At the site are safety measures one can take during and after a flood, a video on flood risks, and a map of high risk flood zones.

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## **Next Forums**

**Please join us for our fall forums at the Boulder Public Library, in the Canyon Room:**

**September 23, 2008: Stream Team Program**

**October 28, 2008: TBD**

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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://moesbroadwaybagel.com>
- Breadworks <http://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 and 7:30 PM  
Sunday 7:30 PM

## BCWI Board of Directors Welcomes New Activity Volunteers

**Brian Vickers - Forums.** Brian was trained as a hydrogeologist (MS Hydrology University of Arizona and BA Geology UC Berkeley) and has worked as an environmental consultant for over 23 years. For the past 14 years, he has worked with URS (and its legacy companies) in Denver and lived with his family in Boulder, CO.

His focus in the past nine years has been on applying GIS, database, and web systems to environmental and engineering information management. Last year, Mr. Vickers completed an MBA in Technology Management through the University of Phoenix. Recently, he was appointed to the City of Boulder Environmental Advisory Board.

**Charlotte Raby - Newsletter.** Charlotte holds a BSE in materials science and engineering from Case Western Reserve University in Cleveland, Ohio. She has worked as a technical writer for AT&T and Bell Labs, and as a semiconductor engineer for Motorola. She is also published in short -- and novel-length fiction. Ms. Raby homeschools her two amazing daughters, and is happy to be a BCWI volunteer.

**Carmi Gazit - Website.** Carmi was born in a Kibbutz in Israel some 40+ years ago. He moved to Florida, USA in 1986 and then moved to Boulder in 1999. He has 2 kids, 2 cats and 1 dog and loves the Boulder outdoors, especially hiking, gardening and some biking. Mr. Gazit is a software engineer for IBM, working on a Fire Planning Web site for the USA government and maintaining the BCWI web site in his spare time.

# Spring Creek Cleanup

By Eric August  
BCWI Creek Cleanup Coordinator  
ericaugust@gmail.com



Photographs by Mike Trevey, Volunteer Connection Ambassador, [volunteerconnection.net](http://volunteerconnection.net)

Our spring cleanup of Boulder Creek was a huge success! Over 30 volunteers gathered on a beautiful spring day in the lead-up to Earth Day.

This large group enabled us to expand beyond our adopted section of the creek (30<sup>th</sup> to Folsom) and increase the amount of trash removed.

After meeting at Scott Carpenter Park we split up and started cleaning sections both upstream and downstream of 30<sup>th</sup> Street.

After a few hours, we removed about 100 bags of trash from Foothills Parkway all the way up to 17<sup>th</sup> Street. Although not directly measured, we estimate that the average bag weighed 10 lbs, meaning we removed about 1000 pounds of trash from the creek!

We hope to continue keeping our adopted section clean, as well as adjacent sections when our volunteer workforce allows.

# Boulder's First Annual *Green Gala* a Success!

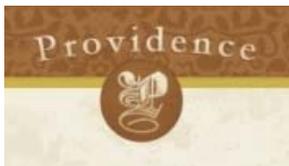
By Charlotte Raby

Boulder's First Annual Green Gala fundraiser and silent auction was held on Thursday, May 15 at the Rembrandt Yard Art Gallery on Spruce Street.

The free event was held in honor of Boulder Creek Watershed Initiative and Wild Bear Center for Nature Discovery. Guests enjoyed a variety of beautifully prepared organic hors d'oeuvres prepared by Providence Catering and listened to Roy Burkett's smooth vocals and guitar music, as they perused over 75 items

available for auction, and placed their bids. Some of the items available were diamond and sapphire jewelry, athletic club memberships, recreation gear, restaurant gift certificates, rafting trips, and artwork. By the end of the evening, these two worthy organizations raised \$5,200!

Boulder Creek Watershed Initiative and Wild Bear Center for Nature Discovery would like to thank the event sponsors: Providence Catering, Whole Foods Markets, and Boulder Beer.

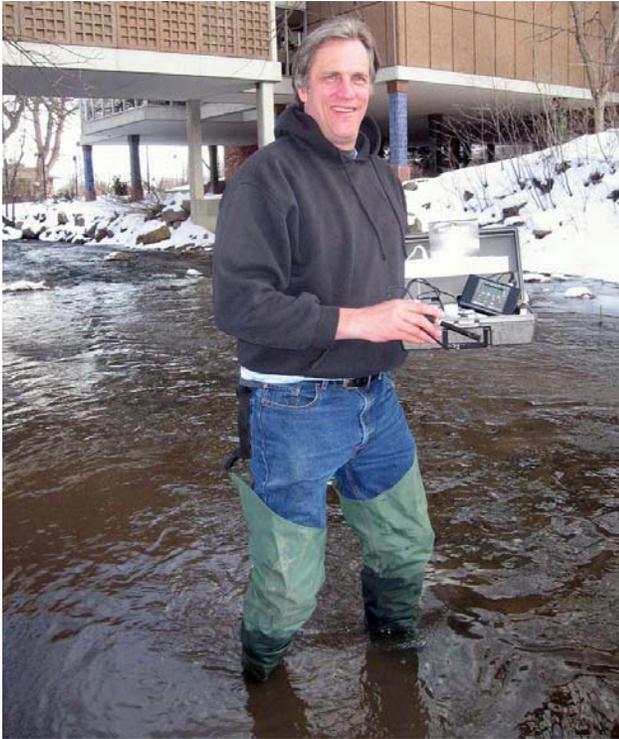


BCWI Director Paul Hempel with Wild Bear Center for Nature Discovery Director and BCWI board member Jill Dreves.



The beautiful façade of the Rembrandt Yard Art Gallery on Spruce St. Photos by Karalyn Capone

## Volunteer with BCWI!



BCWI Executive Director Paul Hempel testing water quality of Boulder Creek (photo: Jim Cowart).

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.
- Newsletter article writer 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. We especially need a donated laptop computer.

**THANKS** for your continuing support!

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## Get to Know Your H<sub>2</sub>O



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### 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 you community/neighborhood group today!

**303-413-7385**

**[waterprograms@bouldercolorado.gov](mailto:waterprograms@bouldercolorado.gov)**  
**[www.keepitcleanpartnership.org](http://www.keepitcleanpartnership.org)**

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# Boulder Creek Watershed Awareness Month

By Chad Pettrone

The City of Boulder has dedicated the month of May to raising awareness for the Boulder Creek Watershed. Major Shaun McGrath signed the declaration on March 17<sup>th</sup> with the intention of bringing the community together for a month of education and appreciation for Boulder's aquatic resources.

May is a time when temperatures rise, mountain ice melts into our rivers, flowers bloom, students get out of school, and we spend more time enjoying outside activities. We start remembering our summer spots where we enjoy fishing, biking, kayaking, a good picnic, a cocktail with an umbrella in it... whatever it is that makes you feel alive in the summer. Boulder Creek Month simply reminds us to celebrate and be in the present moment to this wonderful time of year.

We are blessed with a clean and vibrant Boulder Creek where we can ride our bikes along the seemingly hand swept creek path, picnic in a variety of beautifully well manicured city parks, or go to one of many festivals focused around the creek.

Boulder Creek Watershed Awareness Month opens the door for the opportunity to be involved with a variety of events in the Month of May:

**Showdown at Dry Gulch theater performance** on Wednesday, May 14 at the Boulder Public Library Canyon Theater. *Showdown at Dry Gulch* is designed to teach young people the concepts and importance of water awareness. Show is 4:30 pm – 5:00 pm. Free and open to the public.

**Boulder Water Festival at CU Boulder** will host the annual water festival on May 14, 9 am-2 pm with more than 500 5<sup>th</sup> grade students will have the opportunity to learn about protecting and conserving Colorado's water resources.

**Community Clean Up Day Outreach Table** at Scott Carpenter Park on May 17 from 8 am-12 pm. Come see H2O Jo and get tips and tools to help you conserve and protect water. Free H2O Jo and Flo coloring and activity books for children. Free and open to the public.

**Boulder Creek Clean Up Event** on May 17 the City of Boulder is looking for volunteers to help keep our creek clean. Contact **Mary Maley** 303-413-7245 for volunteer opportunities.

**Boulder County Farmer's Market Watershed Outreach Table** on Wednesday, May 28 from 4:00 pm-8:00 pm. Stop by to get tips and tools to help you conserve and protect water.

**Watershed Awareness display case at the Boulder Public Library main branch.** Up through the month of May. Visit the display case located at the Arapahoe entrance near the fish tank. In addition, pick up flood safety information.

**Boulder Creek Festival Memorial Day Weekend** a variety of non-profit organizations and the Department of Wildlife will be looking for your participation in being an active leader for our aquatic resources. BCWI will share a booth with Wild Bear Center for Nature Discovery on May 25<sup>th</sup> and 26<sup>th</sup>.

Not only are there education and celebration opportunities in the month of May, but there are also important projects focused on improving Boulder Creek's recreational and educational use.

- The City of Boulder Greenways lead by Annie Noble at 303-441-3242 is a program dedicated to the improvement of Boulder Creek Watershed within City limits.
- The Boulder Creek Enhancement Project dedicated to improving the recreational access in the Boulder Creek Canyon between Boulder and Nederland.

Both the Boulder Greenways and the Boulder Creek Enhancement are multi-year projects dedicated to giving our community new and vibrant places to enjoy the Boulder Creek Watershed.

The City of Boulder Greenways System is comprised of a series of corridors along riparian areas including Boulder Creek and six of its tributaries, which provide an opportunity to integrate multiple-use objectives. The designated Greenways tributaries are: South Boulder Creek, Bear Canyon Creek, Skunk Creek, Goose Creek, Wonderland Creek, and Four Mile Canyon Creek.

The Boulder Creek Enhancement Project is not funded by Boulder tax money, but is powered by the Boulder Flycasters, a local non-profit organization. The 2008 Boulder Creek Project will renovate the old and beautiful Rogers Park, located one mile upriver from Boulder Falls, outside of city limits. The \$250,000 Rogers Park Project will enhance the quality of life for aquatic species in the Creek, provide handicap access for mountain fishing, and also offer a streamside-learning center for students of all ages.

The Boulder Flycasters relies on the community's support to fund The Boulder Creek Enhancement Project – you can visit [www.Boulderflycasters.org](http://www.Boulderflycasters.org) to learn more about the project and great gifts available for purchase.

Enjoy this wonderful Month of May, and share the gift of joy that Boulder Creek brings to our City.

**Web sites for local watershed information:**

[www.KeepitCleanPartnership.org](http://www.KeepitCleanPartnership.org)

[www.boulderwater.net](http://www.boulderwater.net)

[www.boulderflycasters.org](http://www.boulderflycasters.org)

[www.bouldercolorado.gov](http://www.bouldercolorado.gov)

**Boulder Creek Watershed Awareness Month activities provided by city of Boulder Watershed Outreach Program and the Keep it Clean Partnership Education Program.**

Please contact Curry Rosato, city of Boulder Watershed Outreach Coordinator, at 303-413-7365 for additional information including specific times and locations.

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## Director's Update: Water Quality Monitoring *Continued from page 1.*

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. BCWI will also make data available on our website at [www.basin.org/bcwi](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 Stream Team on a specific topic of their choice.

For more information visit the Keep It Clean Partnership website [www.keepitcleanpartnership.org](http://www.keepitcleanpartnership.org) or contact Paul Hempel, BCWI Executive Director, at 303-437-1746.

Paul Hempel, Executive Director



Nederland Stream Team. Photo by Jim Cowart

***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 *Ceryle alcyon*



\_\_\_\_\_ \$ 100 - 499 Greenback Cutthroat Trout *Oncorhynchus clarki stomias*



\_\_\_\_\_ \$ 50 - 99 Tiger Salamander *Ambystoma tigrinum*



\_\_\_\_\_ \$ 20 - 49 Green Darner *Anax junius*



\_\_\_\_\_ \$ 0 - 19 Golden Stonefly *Hesperoperla pacifica*

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!*

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