



BIG THOMPSON WATERSHED FORUM

'THE FUTURE OF WATER QUALITY IS IN OUR HANDS'

2008 Annual Meeting

"Voices From The Watershed"



Photo by Zack Shelley

Northern Colorado Water Conservancy District
Berthoud, Colorado

Tuesday, October 28, 2008



**Our mission is
to protect and improve water quality
in the Big Thompson River Watershed
through collaborative monitoring,
assessment, education and
restoration projects.**

2008 Annual Meeting Agenda

Tuesday, October 28, 2008

- 8:00 am  Registration and continental breakfast
- 8:45 am  *Opening Remarks/Forum Accomplishments* - Ed Young
- 9:00 am  *Forum Monitoring and Assessment Program Update* - Zack Shelley
- 9:30 am  **Mercury in the Rocky Mountains: From Deposition in Loch Vale to Fish in Horsetooth**
Alisa Mast, United States Geological Survey, Denver, CO
- 10:00 am  **Water Quality Impacts on Brewing**
Gaspare Bonventre, Anheuser-Busch, Assistant Brew Master, Fort Collins, CO
- 10:30 am  Break
- 11:00 am  **Emerging Contaminants in Colorado Water Resources: Should We Worry When We Find Prozac or Nonylphenol?**
Bill Battaglin, United States Geological Survey, Denver, CO
- 11:30 am  **An Overview of Aquatic Nuisance Species in Colorado – Zebra/Quagga Mussels**
Ken Kehmeier, Colorado Department of Wildlife, Fort Collins, CO
- 12:00 pm  *Catered lunch* provided to all attendees and speakers
- 1:00 pm  **Linking Nutrient Enrichment and Disease Emergence in Freshwater Ecosystems**
Pieter Johnson, University of Colorado, Boulder, CO
- 1:30 pm  **Effects of Beetle-killed Trees on Water Quantity and Quality in North-Central Colorado**
John Stednick, Colorado State University, Fort Collins, CO
- 2:00 pm  Break
- 2:15 pm  **Three Lakes Water Quality Issues – Grand Lake, Lake Granby & Shadow Mountain Res.**
Jane Tollett, Grand County Water Information Network
- 2:45 pm  *Wrap-Up* - Ed Young

Speaker Abstracts & Bios

Mercury in the Rocky Mountains: From Deposition in Loch Vale to Fish in Horsetooth Reservoir

-- Alisa Mast, USGS

The growing number of fish consumption advisories for Colorado reservoirs has increased concern about mercury contamination of aquatic ecosystems. Although atmospheric deposition is the likely source of mercury, watershed processes generally play a much greater role in the degree to which mercury accumulates in fish. Ms. Mast will present insights on mercury cycling learned from a small watershed approach in Rocky Mountain National Park. Data collected downstream in the Big Thompson Watershed also will be presented.

Alisa Mast has been a hydrologist with the U.S. Geological Survey since 1992. She works with the Alpine Hydrology Research Group in the Colorado Water Science Center in Lakewood. Her research focuses on the biogeochemistry of high-elevation streams and lakes with special emphasis on atmospheric pollutants such as mercury and pesticides. She currently has projects in Rocky Mountain National Park, Great Sand Dunes National Park, Glacier National Park, Yosemite National Park, and several wilderness areas in Colorado.

Water Quality Impacts on Brewing

-- Gaspare M. Bonventre, Anheuser-Busch

Why is water quality important to the brewing process? What do brewers generally look for in their water? These questions and more will be answered today in a short and fun presentation about America's favorite beverage.

Gaspare Bonventre is currently an Assistant brewmaster with Anheuser-Busch in Fort Collins. He has been with Anheuser-Busch for over 8 years working in various locations and capacities. He is a graduate of the University of Florida with a B.S. in Chemical Engineering and is currently a MBA student at the University of Colorado.

Emerging Contaminants in Colorado Water Resources: Should We Worry When We Find Prozac or Nonylphenol?

-- William A. Battaglin, USGS

This talk will briefly describe what "Emerging Contaminants" are and where they come from. Then the talk will focus on the occurrence of pharmaceuticals and nonylphenol in Colorado streams and groundwater and their potential affects.

Bill Battaglin received a B.A. in Geology from the University of Colorado, Boulder, in 1984, and a M. E. in Geological Engineering, from Colorado School of Mines, in 1992. He began his professional career 1982 as a technician for the U.S. Geological Survey (USGS) in New Jersey and has worked for the USGS ever since. He is currently working on investigations of the occurrence of glyphosate in National Parks and

National Wildlife Refuges, fungicides in US streams and ground water, nutrient flux of the Mississippi River, emerging contaminants in Colorado's water resources and the decline of amphibian populations in North America.

An Overview of Aquatic Nuisance Species in Colorado – Zebra and Quagga Mussels

-- Ken Kehmeier, Colorado Division of Wildlife

This talk will highlight aquatic nuisance species that are found in Colorado or in nearby states. The talk will focus on the Zebra/Quagga mussel issue and how the State of Colorado and its partners are approaching prevention and containment.

Ken Kehmeier is a 4th generation Colorado Native, raised on the Western Slope on the family cattle ranch. He attended Colorado State University where he received a B.S. and M.S. in Fishery and Wildlife Biology. He has worked for the Colorado State Extension Service as a fishery specialist, in aquatic consulting and for the last 22+ years has been a fishery biologist for the Colorado Division of Wildlife. Most of those years as the aquatic biologist for the Poudre and North Platte River Basins, he currently is the Senior Aquatic Biologist for the Platte River Basin.

Linking Nutrient Enrichment and Disease Emergence in Freshwater Ecosystems

-- Pieter Johnson, CU Boulder

Worldwide increases in number of human and wildlife diseases have challenged ecologists to understand how large-scale ecosystem changes affect host-pathogen interactions. Aquatic ecosystems often represent a nexus between habitat alteration and disease emergence, and growing evidence indicates that nutrient runoff can profoundly alter pathogen abundance and patterns of transmission. This presentation examines available evidence linking anthropogenic nutrient inputs and diseases of humans and wildlife and explores how forecasted changes in nutrient enrichment are likely to influence patterns of infectious and noninfectious diseases, including cholera, West Nile virus, malaria, harmful algal blooms, coral reef diseases and amphibian malformations.

Dr. Pieter Johnson is an Assistant Professor in the Ecology and Evolutionary Biology Department at the University of Colorado. He received his Bachelor of Science in Biological Sciences from Stanford University in 1998, and completed his Ph.D. in aquatic ecology at the University of Wisconsin, Madison. Dr. Johnson's research focuses on two pervasive forms of biological change in freshwaters: disease emergence and species invasions. Both have important consequences not only for individuals and populations but also for entire ecological communities and ecosystem services.

Effects of Beetle-Killed Trees on Water Quantity and Quality in North-Central Colorado

-- John D. Stednick, Colorado State University

A beetle epidemic in Colorado will continue to decrease the forest canopy due to defoliation and result in decreased precipitation interception and decreased summer evapotranspiration. Hypothesized changes in hydrologic process rates will result in increased soil moisture and increased annual water yield (streamflow). Watersheds with varying areas of beetle killed forest in Northern Colorado were selected for study. A progression of beetle-killed watershed areas was used to assess if water yield increases are measurable compared to a nearby relatively 'undisturbed' watershed.

Dr. Stednick is a professor of watershed science at Colorado State University. His teaching and research interests are in the understanding of natural disturbances and land use effects on water quality and quantity. Recently-funded research projects include: the effects of fire on water resources at different spatial and temporal scales; effects of coal bed methane water discharge on soils and water quality, conjunctive use effects on water quality; effectiveness of forest best management practices (BMPs); and the effects of pine beetles on water resources.

Three Lakes Water Quality Issues – Grand Lake, Lake Granby & Shadow Mountain Reservoir

-- Jane Tollett, Grand County Water Information Network

Is the water good, bad or just plain ugly? Was it clearer 40 years ago and if so, why? Is there a simple "fix" for Grand Lake? These are some of the questions Ms. Tollett and GCWIN are trying to answer as they sample, observe and live on the lakes.

Jane Tollett retired from Procter & Gamble in 2003 as the manager in charge of the Health, Safety and Environmental programs for the Tissue/Towel Division. She has worked in North America, Mexico, Europe and Asia. Her background is Chemical and Environmental Engineering, and she currently is working for the Grand County Water Information Network doing both grant and administrative work to help grow the organization. Her biggest challenge since moving to the mountains last year has been trying to sprint fast enough to make good calls as a soccer referee.

Staff, Board of Directors and Volunteers

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