

American Water Resources Association Montana Section
21st Annual Meeting
Montana's Water Outlook:
CURRENT AND FUTURE CHALLENGES

PRELIMINARY AGENDA

(agenda subject to change, "S" indicates a student presentation)

MONDAY, OCTOBER 4, 2004

7:00 am – 5:00 pm **REGISTRATION, Red Lion Hotel Lobby, Helena**

8:00 am Meet in Red Lion Colonial lobby for optional **Field Trip** to burn areas near Canyon Ferry. Please bring a hard hat, boots and appropriate outdoor gear. Bo Stuart, Hydrologist with the Helena National Forest, and Chuck Parrett, Hydrologist with USGS, will be our tour guides.

Noon Return from Field Trip
Lunch on Your Own

SESSION 1 (Plenary). CHALLENGES TO MONTANA'S WATER FUTURE

1:00 pm -- David Salo, President, Welcome and Introductions
-- Water Center Welcome, Liz Galli-Noble
-- Chuck Dalby, Vice President, Local Logistics and Announcements

Moderator: Susan Higgins, Montana Water Center

1:30 pm Jane Jelinski, Director, MSU Local Government Center. "Challenges faced by local decision-makers making land-use and water-use findings."

2:05 pm John Wheaton, Research Hydrologist, Montana Bureau of Mines and Geology. "Ground-water issues associated with coalbed methane in the Powder River Basin, Montana."

2:40 pm **Break**

3:00 pm Thomas Patton, Montana Bureau of Mines and Geology, Butte. "Isolating long-term trends in water-level and climate records as a tool to evaluate the impact of climate on water wells."

3:30 pm Mike Roberts, Montana Department of Natural Resources and Conservation, Helena. "Water management in the upper Big Hole."

4:00 pm Jim Robinson and Chuck Dalby, Montana Department of Natural Resources and Conservation, Helena. "Historic channel and floodplain modifications of the upper Yellowstone River."

- 4:30 pm** Chuck Dalby, Jim Robinson, and Jane Horton, Department of Natural Resources and Conservation, Helena. "Estimation of historic effects of channel modification on the upper Yellowstone River using a morphology-based sediment budget."
- 5:00 pm** **Adjourn**
- 5:30 pm** **Poster Session:** Poolside. Beer, wine, lemonade and appetizers on the house. Entertainment from Helena's acoustic group, "Irish Stew"
- 7:00 pm** **Banquet:** Western Barbeque (with options for vegetarians)
Afterwards: Special announcements from the officers, photo contest (to include INCREDIBLE prizes for all who submit photos), and a slide show presentation on water management in MADAGASCAR. Also: May Mace oil painting raffle!

TUESDAY, OCTOBER 5, 2004

SESSION 2 (Concurrent). MINING AND WATER QUALITY

Moderator: TBA

- 8:00 am** Investigation of microbial ecology structure and function on coalbed aquifers: Powder River Basin, Montana. Patrick Ball, University of Montana
- 8:20 am** **S** Fisher Creek, MT and Rio Agrio, Argentina: A geochemical comparison of a mining-impacted stream in Montana with a geogenically-derived acidic river in Patagonia. Steve Parker, Montana Tech.
- 8:40 am** **S** Geochemistry and stable isotope composition of H₂S-rich mine waters in Butte, Montana: applications to bioremediation in the Berkeley Pit-Lake. Amber Henne and Chris Gammons, Montana Tech, and Simon Poulson, University of Nevada.
- 9:00 am** **S** Algal bioremediation of the Berkeley Pit lake system: an in-situ test using limnocorrals. Grant Mitman and Nicholas Tucci, Montana Tech.
- 9:20 am** Temporarily Vacant
- 9:40** **Break**

SESSION 3 (Concurrent). GROUND-WATER STUDIES

Moderator: TBA

- 8:00 am** Bitterroot Valley ground-water quality. John LaFave, Montana Bureau of Mines and Geology.
- 8:20 am** **S** Predicting ground-water nitrate concentration from land use. Kristin Gardner, Montana State University, and Richard Vogel, Tufts University.
- 8:40 am** Drinking-water wells and septic education modules for small acreage (ranchette) owners. Tammy Crone, Gallatin Water Quality District.
- 9:00 am** **S** Madison aquifer discharge to the Gallatin River and the Yellowstone National Park controlled ground-water area. Mark Schaffer, Montana State University.
- 9:20 am** Meadowlark Park wetlands restoration project. Jenny Erickson, Montana Bureau of Mines and Geology.
- 9:40** **Break**

**SESSION 4 (Concurrent).
FLOODPLAIN/CHANNEL
MANAGEMENT**

Moderator: Mike McLane, DNRC

10:00 am S Evaluation of riparian health assessment methods to assess conditions of perennial streams in two different geological provinces in the state of Montana. Travis Miller, Montana State University.

10:20 am Intermountain spring creeks: their conservation and restoration. Scott E. Gillilan, Gillilan Associates, Inc., Bozeman.

10:40 am Two-dimensional flood-plain modeling of Tenmile Creek near Helena, Montana. Katherine Chase, USGS, Helena.

11:00 am Determination of channel-morphology characteristics, bankfull discharge, and various design-peak discharges in western Montana. Sean Lawlor, USGS, Helena.

11:20 am Classification and quality criteria for streams of Montana's northern glaciated plains. Michael Suplee, Montana Department of Environmental Quality, and Vicki Watson, University of Montana.

11:40 am S Anabranch reaches on the lower Yellowstone River. Ryan McLane, Montana State University.

**SESSION 5 (Concurrent).
SURFACE WATER QUALITY**

Moderator: Tammy Crone, Gallatin County Water Quality District

10:00 am Effect of alternative silvicultural treatments on snow accumulation in lodgepole pine stands, Montana. Scott Woods, Robert Ahl and Jason Sappington, University of Montana.

10:20 am Sediment contributions to the St. Regis River due to winter traction sanding along Interstate 90 at Lookout Pass. Jeff Dunn, Land & Water Consulting, Bozeman.

10:40 am S Travel distance and volume of forest road sediment below drivable drain dips in belt and glacial till parent materials in western Montana. Brian Parker, University of Montana.

11:00 am S Impacts of land use and cover change in soil hydraulic properties, Rondonia, Brazil. Katharine Schultz, Brian McGlynn and Helmut Elsenbeer, Montana State University.

11:20 am A computer program for estimating instream travel time and concentrations for potential contaminants from spills along the Yellowstone River. Peter McCarthy, USGS, Helena.

11:40 am Temperature, plants and oxygen: how does season affect constructed wetland performance? Otto Stein and Paul Hook, Montana State University.

CLOSING PLENARY

12:00 Announcement of Next Year's Officers, Student Awards, Raffle Winner, etc. . . .

12:15 pm Adjourn – Happy Trails!

POSTER SESSION, MONDAY EVENING, OCTOBER 4, POOLSIDE

1. Ground-water quality in Lockwood. Rye Svingen, Montana Bureau of Mines and Geology.
2. Characterization of metal contamination in the riparian wetlands at the headwaters of the Stillwater River, Montana. Steve Cook, Montana State University.
3. Age dating of the geologic units in the Belt, Montana area. Shawn Reddish, Montana Bureau of Mines and Geology.
4. Water levels and nitrate in Warne Heights, upper Summit Valley, Silver Bow County, Montana: a case study of bedrock aquifer vulnerability. Camela Carstarphen and John LaFave. Montana Bureau of Mines and Geology.
5. **S** Water quality survey of nitrate levels and coliform/coliphage presence in Helena Valley compared with regional geology, land usage, and well depth. Emma Swingle and Sam Alvey, Carroll College, Helena, and Kathy Moore, Lewis and Clark County Water Quality Protection District.
6. Estimated water use in Montana in 2000. Michael Cannon, USGS.
7. **S** Groundwater-surface water exchange across alpine-valley transition. Timothy Covino and Brian McGlynn, Montana State University, and Richard Sojda and Brian Edwards, USGS Northern Rockies Science Center.
8. Geochemical constraints on selection of coalbed methane product water strategies. Ronald Drake, Drake Engineering.
9. **S** Assessment of pre-re-naturalized groundwater exchange in two stream channels and riparian zones, Jocko Valley, western Montana. Aaron Fiaschetti, University of Montana.
10. The Wild Fish Habitat Initiative: a new resource for fish habitat restoration efforts. Liz Galli-Noble and Molly Boucher, Montana Water Center.
11. Feasibility study of implementing EPA's proposed ground water rule (GWR) sampling requirements for fecal indicators. Steve Kilbreath and Joe Meek, Montana Department of Environmental Quality, and Kathy Moore, Lewis and Clark County Water Quality Protection District.
12. Ground-water availability by depth and quality criteria in Yellowstone and Treasure counties, Montana. John Olsen, Montana Bureau of Mines and Geology.
13. **S** Collection of baseline ground-water data in Northern Park County. Dixie Schopp, Montana Tech.
14. Treefall patterns in Western Montana riparian areas, and implications for woody debris recruitment modeling. Ron Steiner and Jeff Light, Plum Creek Timber Company.
15. **S** Impact of land use change on stream-water quality, Big Sky, Montana. Kristin Gardner, Montana State University.
16. Interactive CD-ROM training for water operations. Ken Glynn, Montana Water Center.
17. Whirling disease outreach. Amy Rose, Montana Water Center.
18. An aerial photo comparison of hailstone lake hydrology since 1941. Jay Hanson, Montana Bureau of Mines and Geology.
19. Rainfall events and their effect on severely burned areas of western Montana following the forest fires of 2000. Ray Nickless, National Weather Service, Missoula.