



# Big Thompson Watershed News

The Quarterly Newsletter of the Big Thompson Watershed Forum

Spring 2003

Volume 4, Issue 1

## Solar-Powered Ingenuity Waters Cattle Off-Stream

by Barb Maynard

Two Park County ranchers are solving a problem that has frustrated ranchers, water providers and environmentalists alike – how to water livestock without having animals tromping through, defecating in and generally disturbing streams. The simple solution would be to pump water from streams into stock tanks situated outside riparian areas, but Colorado water law prohibits such pumping without diversion rights. Unless the law is changed, ranchers need a different answer, and Bill Gordon and Lawlor Wekam might just have it.

The Tarryall Creek flows through Wekam’s Eagle Rock Ranch, providing water for his 200-plus head of cattle before making its way to the South Platte. Wekam has tried various means to water his cattle off the creek. After all, Wekam says, “If they drink out of the river, I own the property, so they’re polluting my river.” This winter, Wekam tried something new.

Gordon, a Trout Unlimited member and fellow rancher, designed a system to pump groundwater from the creek aquifer. Wekam described the system: “We put a shallow well beside the river with a 4-foot steel casing. Then we put a tank on top of it and put a solar pump down in the well. We’re pumping water up into this tank just to keep the cows out of the river.” The system

requires a domestic well permit, given for each 35-acres of land.

The entire system cost approximately \$1200 and took Wekam two days to install. The solar panel, which cost about \$500, is portable so it can be moved from well to well as cattle are moved around grazing land. The set-up was funded by grants from the National Fish and Wildlife Foundation and the Collegiate Peaks Chapter of Trout Unlimited.

Cold winter nights have created one problem – ice forms on top of the water when temperatures drop. Ice can also freeze the water level sensors, preventing the pump from turning itself off and on. Gordon had hoped to re-circulate the water to prevent freezing, but that design was not approved.

“The state engineer wouldn’t let us circulate the water, which would have made it work a lot better,” Wekam said. “They’re worried about contaminating the groundwater. The only thing getting in the tank is a little bit of saliva,” he said.

“A little saliva versus 200

*continued on p. 7*



A solar-powered pump and stock tank are keeping cattle out of streams.

## CSU, Sylvan Dale Ranch, and the Big Thompson Watershed: A “Win:Win:Win” Proposition

by Dave Armstrong

Dave Armstrong is Resident Naturalist at Sylvan Dale Ranch.

Sylvan Dale Ranch and Colorado State University are working together to make a difference in the Big Thompson Watershed. In Fall 2002, Sylvan Dale was chosen as a case-study for the capstone seminar, “Rangeland Planning and Grazing Management.”

A team of students is learning as much about Sylvan Dale as possible: in the field, in the livestock records, in the financials. The product of Fall Semester was an impressive, comprehensive inventory; Spring Semester will produce an integrated management plan which should provide a basis for adaptive, sustainable management of Sylvan Dale’s working ranch for many years to come. This is no mere academic exercise. Students will recommend how many hooves to put on which pastures when, and for how long, how to evaluate the impact, and how to adapt



Dave Armstrong teaches a young naturalist about yucca.

management to changing conditions.

The study seeks to see the ranch as a whole. Sylvan Dale is up-and-down country, dropping over 2000 feet from Cedar Park to the Big Thompson at the mouth of the Buckhorn. Cedar Creek, Dry Creek, Jug Gulch, Sulzer Gulch, and near-infinite unnamed trickles and gullies and gulches gather the headwaters from Green Ridge, Inspiration Point, Alexander Mountain, Eagle Ridge, and Red Ridge. A watershed view is the right scale for planning, management and conservation; watersheds are big enough to encompass processes and connections.

The Big Thompson begins in snowdrifts along the Continental Divide and tumbles eastward to the South Platte. At the mouth of its Ice Age canyon, the river “shifts gears,” from mountain torrent to prairie stream. Much of this transition zone is within the ranch, putting Sylvan Dale at the

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## ABOUT US...

The Big Thompson Watershed Forum is an association of private citizens and representatives of government, organizations, and businesses. We are united with the common goal of protecting water quality throughout the Big Thompson Watershed. We strive to accurately assess conditions in the Big Thompson Watershed and to facilitate informed, cooperative water quality protection.

The Forum is sponsored by the North Front Range Water Quality Planning Association and maintains a strong partnership with the Thompson R2-J School District. The Forum is a Colorado nonprofit corporation.

### BOARD OF DIRECTORS

**Steve Adams**, Chairman  
**Ben Alexander**  
**Don Carlson**  
**Dave Cole**  
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**Hillary Mizia**  
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**Dave Dubois**, North Front Range Water Quality Planning Association Manager  
**Rob Buirgy**, Coordinator  
**Janeen Simon**, Program Director  
**Barb Maynard**, Assessment/ Communications Program Manager

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## A Message from the Coordinator:

### Rural and Urban Agriculture Play a Part

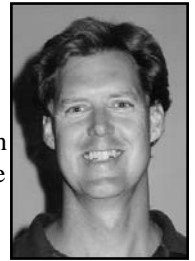
by **Rob Buirgy**

This is the fourth and final installment in our newsletter series on the beneficial uses of water in the Big Thompson Watershed. In past issues we have looked at water quality as it relates to drinking water, recreation, and aquatic life. We have discussed the importance of clean water to our own towns and neighborhoods, to aquatic animals and terrestrial wildlife, and to all of us who count water sports or casual tubing trips among our favorite activities.

In this issue we will look at how our agricultural community relies on the benefits of clean water and explore some of the innovative practices that conserve water supplies and protect water quality for generations to come.

Agriculture is the fundamental activity for every culture that advances beyond the survival focus of a hunting and gathering lifestyle. Although many of us may think otherwise, cultivating the soil, producing crops, and raising livestock are not solely the province of farmers and ranchers. In our modern society, we may buy our vegetables and meat at the grocery store, but more likely than not we return home to cultivate our yard and produce a bountiful crop of bluegrass. We may not manage a herd of dairy cattle, but many of us manage our own small 'herd' – of cats, dogs, or other domestic livestock.

In this we can find common ground with all our watershed neighbors. Whether we raise livestock for pleasure or food; regardless of the urban or rural nature of our crops; we share the need for a reliable supply of clean water and the responsibility to use it wisely.



Rob Buirgy

As agriculturalists, we have great potential to tax this resource – by applying more than necessary for irrigation, or taking a relaxed attitude toward chemical application and erosion control. In either case, runoff from our agricultural projects can have severe and long-lasting negative impacts on our water quality.

With this potential for great harm comes the responsibility for wise use. By conserving water and carefully managing sources of pollutants, we can regain lost ground. We can restore and maintain the high quality water that is native to our headwater landscape. It is up to each of us, city and county dwellers alike, during wet years or dry, to learn and apply best practices with our agricultural pursuits. We hope that the information in this issue of the Big Thompson Watershed News will provide insight and inspiration during the coming growing season – please pass this issue on to a friend and encourage everyone to do their part in protecting the quality of our waters. ♻️

## BTWF Board Election

Results are in from the Forum's first cyber Election of its Board of Directors. We welcome Hillary Mizia to the board, and congratulate Connie O'Neill, Ed Young, and Dave Cole on re-election. Thanks, Connie, Ed and Dave for your service! All board members serve two-year terms, with half of the board coming up for election each year.

This year the election was held via e-mail, rather than at the Annual Meeting, so the board could be in place earlier in the year. Forum members received and returned ballots via *btnews*, the Forum's e-mail listserve. Thanks to all the Forum members who voted!

New board member Mizia works as the Sustainability Goddess for New Belgium Brewing Company in Fort Collins. She plans to finish a Masters of Arts in Environment and

Community from Antioch College in April. She is also on the board of Friends of the Poudre. She celebrated last year's autumnal equinox by getting married to John Mizia.

Mizia sees New Belgium and the Forum as logical partners: "New Belgium is a huge water user and we're also a community member. When Rob and Janeen approached me about having New Belgium's presence on the board, it seemed to make a lot of sense because having really good water

quality is so important to our product. We are super blessed with the quality of water in Fort Collins. Water is all encompassing... For me the bottom line is respect, respect for everything on Earth."



Hillary Mizia & her dog Buddy.



## The Changing Relationship of Agriculture and Water Quality

by Barb Maynard

Of the 1.8 trillion acres of water diverted each year in Colorado, approximately 80 percent is used to irrigate crops. As such a large water user, farming can have an enormous effect on water quality statewide.

In 1990, the Colorado legislature passed the Agricultural Chemicals and Groundwater Protection Act, which charged agriculturalists with voluntarily reducing water pollution from their operations. To guide farmers and ranchers in these efforts, best management practices recommend specific methods, structures, and practices for reducing nonpoint source water pollution while maintaining a successful business.

Nitrates and pesticides are the farming pollutants of greatest concern. A 1992 study, which sampled 96 domestic wells along the lower South Platte aquifer from Denver to Julesburg, found that one-third of the wells exceeded the EPA drinking water standard for nitrates of 10 milligrams per liter. Exceedingly high levels of nitrates in drinking water are dangerous to pregnant women and infants; lower levels contribute to blooms of algae, which then, through a domino effect, kill off other aquatic life.

To apply nitrogen fertilizer efficiently, the first step is to know how much nitrogen is already available to plants. "One source of nitrates for crops is what's left over in the field. More farmers are either soil sampling or using a crop consultant," said George Reed, member of the Forum board and the Larimer County Agricultural Advisory Board. "A few ditch companies also provide information on the amount of nitrogen in their irrigation water. So now he knows what he's got left in the soil and what might be coming in irrigation water." By using these two pieces of information, along with nitrate requirements for their crops, farmers can calculate how much fertilizer to apply. Savings on fertilizer costs helps compensate farmers for the time and expense of soil sampling. The method and timing of fertilizer application also affect how much nitrogen is taken up by plants, versus being washed away by irrigation or rainwater.

Unlike nitrates, pesticide levels in the South Platte aquifer have decreased over the last ten years, according to Reagan Waskom, water quality specialist with the Colorado State University Cooperative Extension. Several factors account for the difference, including tradition. "There's a century of animal feeding that's going on in that area," he said. "Compare that with pesticide use, which really began in the late 50's to early 60's." In addition, pesticides have been subjected to greater public pressure, which has resulted in use restrictions and more conservative application rates. "We used to use 3 to 4 pounds of atrazine, now it's rare to see someone use more than a pound,"



Center pivot irrigation systems can boost water use efficiency.

Waskom said. The chemical structure of pesticides has also changed. "The days of chemicals with very long half-lives, like we saw with DDT – that just isn't acceptable anymore." Today's pesticides tend to be less toxic and less persistent in the environment. Finally, intensive educational efforts have been aimed at instructing farmers on proper pesticide use.

After applying fertilizers and pesticides effectively, efficient irrigation can go a long way toward reducing the amount of water flushing nutrients, pesticides, and sediments from farms. Different methods of irrigation differ in their efficiencies – a center pivot system can be 50 percent more efficient than flood irrigating, and drip irrigation is more efficient still. However, these systems can be expensive. Best management practices recommend ways to make any irrigation system more efficient.


Accurately determining when to water can also decrease water use. A 1997 study found that less than one-third of Colorado farmers use accumulated evapotranspiration or depleted soil moisture, the most reliable methods of assessing crop water needs. Many farmers rely on crop appearance and feel, but these measures can be deceptive.

Different states have adopted different strategies toward cleaning up water degradation. In Nebraska, for example, the use of agricultural chemicals is closely regulated, and, unlike in Colorado, nitrate levels have decreased there. "The things we're doing voluntarily, they actually require from producers," Waskom said. "The question is, Will a voluntary approach turn that corner and get us there?" One exception to voluntary compliance in Colorado is concentrated animal feeding operations, such as large hog farms, which are more regulated than they were ten years ago.

Suburbanites should not ignore their own effects on water quality. "There is a growing number of reports that comment on urban agriculture (lawns) as a high source of nitrates," Reed said. "I know when I lived in the city, we didn't calibrate fertilizer spreaders. The more, the better, until you burned your grass, then you backed off." There is little financial incentive for homeowners to reduce the amount of fertilizer or pesticides they apply, so chemicals are often over-used.

The flip side of agricultural effects on water quality is what farmers need for healthy crops. Salinity is the biggest water quality concern for Colorado farmers. Giving salty water to plants is as pointless as giving it to a thirsty person – it only worsens the situation. High sodium content can cause additional problems, by altering the physical nature of soil and making it impervious to water. In the Big Thompson watershed, salts are not usually a problem, but they are farther downstream. "It's a huge issue in Colorado and it's getting bigger all the time," Waskom said. "The Arkansas River in southern Colorado is the most saline of its size in the United States. In the lower South Platte, production of pinto beans has become very difficult."

Publications on best management practices are available from county extension offices and on-line:

<http://www.colostate.edu/Depts/SoilCrop/extension/WQ> 



**River Life** This new feature of the News will focus on the organisms that live in and around Colorado's waters.

## From bed to bank, stoneflies are stream specialists

by **Jeremy Monroe and Bob Zuellig**

*Jeremy Monroe and Bob Zuellig are aquatic ecologists in the stream ecology and ecotoxicology laboratories at Colorado State University.*

Like most aquatic insects, stoneflies spend the majority of their lives underwater, crawling and clinging on streambeds. This diverse group of insects represents a variety of ecological roles in streams, and includes predators, leaf-eaters, and algae-grazers. At least 86 stonefly species exist in Colorado, most inhabiting mountainous watersheds and some persisting out onto the plains. Stoneflies are particularly sensitive to changes in water quality, and their diversity and abundance is often measured as an indication of stream health. Stoneflies spend at least a year as immature aquatic nymphs before emerging from the water as adults. To emerge from the stream, however, they must emerge from themselves.

In an extreme case of self-reinvention, an emerging stonefly will climb out of the water and crawl directly out of its nymphal skin. The emerged adult unfolds a new set of wings, which can ironically be too short for flight in males of some species (like the ones pictured here). The shed skins are left behind as monuments to this transformation, and can be conspicuous among streamside stones. With mating on the mind, adult stoneflies will often locate each other through communicative drumming of their abdomen against objects. After mating, females return to the water to lay eggs. Most species emerge and mate in spring and summer, but some prefer to do so on snowy streambanks during winter and early spring. 💧



**Emerging talent.** Like Clark Kent in a phone booth, stoneflies wiggle out of their wetsuits to reveal their flight suits.

## Watershed Planning for Agriculture

by **Michelle Wind**

*Michelle Wind, P.E., is an Environmental Engineer with Brown and Caldwell, a consulting engineering company in Denver.*

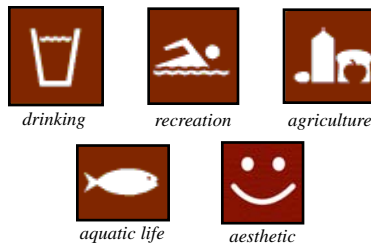
The Big Thompson Watershed Forum has identified agriculture as one of the “Big 5” beneficial uses, in addition to drinking water, recreation, aesthetics, and the protection of aquatic life. The Forum was created to assess and protect water quality to maintain and expand these uses.

The recent drought conditions have put a significant strain on Colorado agriculture. We saw the obvious impacts last summer as we drove by dry crop and pastureland or heard about livestock sales due to feed shortages. Significant water impacts on agriculture, whether due to water quantity or water quality, do not directly affect most of us, because less than 2% of us make our living from agriculture, and chances are that the majority of our food comes from outside the Watershed. However, local agriculture in the Big Thompson Watershed provides indirect benefits including open spaces and wildlife habitat.

### Why do we need to protect water quality for agriculture?

The Big Thompson Watershed extends from the Continental Divide to the high plains where the Big Thompson River joins the South Platte River southwest of Greeley. Agriculture makes up about 25 percent of land use within the watershed, with the majority of agricultural lands located in the lowest portion of the watershed. With an average annual precipitation of only 13”, agriculture in the Big Thompson Watershed and elsewhere in eastern Colorado relies

### The “Big 5” Beneficial Uses of Water



on surface water diversions, storage reservoirs, and groundwater to meet crop and livestock needs. The Bureau of Reclamation Colorado-Big Thompson Project supplies over 50% of its water to agriculture, with users located clear to the state line.

Agriculture provides direct benefits such as food supply and support to the local economy, but it also provides indirect benefits that relate to our quality of life. In the recent Front Range economy, selling land for urban development has been more lucrative than most crops, but agricultural lands provide open spaces and can conserve riparian areas, wetlands, and wildlife habitat, which can provide multiple watershed benefits.



### How does the Big Thompson Watershed Forum protect water quality for agriculture?

Planning on a watershed level integrates consideration for multiple land and water uses within the Big Thompson Watershed (for example, see the Sylvan Dale article on p. 1). Protecting water quality for one use often benefits other uses. Water quality standards established to protect agricultural uses are typically less restrictive than for other uses such as drinking water, recreation, and aquatic life. Therefore, the ongoing efforts that focus on reducing the impacts of constituents such as nutrients and sediment can also benefit agriculture. For example, nutrients are necessary to increase yields, but certain crops can be negatively impacted by excessive nutrients or if nutrients are applied after a

*continued on p. 6*



## BTWF Annual Meeting

by Barb Maynard

The universal importance of water quality was evidenced by the diverse crowd at the Big Thompson Watershed Forum's annual meeting, held February 20th at Loveland's McKee Conference Center. Approximately 140 people, including local government representatives, state and federal water quality officials, and concerned citizens, turned out to learn about the Forum's efforts to tackle water quality issues in our watershed.

Two of Colorado's top water quality officials spoke at the meeting. Robert Sakata, chairman of the Colorado Water Quality Control Commission (WQCC), discussed the role that local watershed groups play. Unlike the WQCC, which has to follow a legislated, formal process, Sakata pointed out that community groups such as the Forum have the flexibility to form creative partnerships that can generate creative solutions. "The Commission really likes to see diverse groups work together," he said. He also emphasized the public responsibility and ability to make things happen. "We all live downstream," he said. "Each person is a valuable partner and holds a piece of the watershed puzzle."

Dick Parachini of the Colorado Water Quality Control Division (WQCD) spoke about the changing face of water quality issues. After awareness of water quality problems began in the 1960's and 70's, implementation of the Clean Water Act was successful at reducing recognized toxins such as xylenes, cadmium, and others. "After 30 years of implementation, we're facing new challenges," Parachini said. "Our new challenges aren't things



Clockwise from top left: WQCD Agricultural Outreach Specialist Randy Ristau chats with WQCC chairman Robert Sakata; WQCD Unit Manager Dick Parachini explains the role that nutrients play in water quality problems; Forum member Bev Hall talks with Loveland City Councilman Walt Skowron.

that are coming out of the pipe." Currently some of the biggest water quality problems are nonpoint source pollutants, including nutrients such as nitrogen and phosphorus, which come from diverse sources. In fact, in 1996 the Environmental Protection Agency reported that nutrients were the nation's leading cause of water quality impairment.

Ben Alexander, Forum board member, Forum Assessment Committee Chair, and Watershed Protection Manager for Fort Collins, explained why excess nutrients are a problem. Too much of a good thing can disrupt the normal food web, causing algal blooms that lead to poor water conditions and die-offs of aquatic animals. Sources of nutrient pollution in the Big Thompson watershed include old septic systems, corrals and feedlots, golf course run-off, forest fires, and others, he said.

Ed Young spoke about the Forum's plans for 2003, which range from hosting a second annual community river clean-up to installing a solar-powered water circulator to alleviate poor water conditions at Silver Lake. Plans are also underway to expand an early warning system that allows Loveland to avoid taking water into its treatment and hydroelectric plants when water quality reaches dangerously poor levels.

Forum Coordinator Rob Buirgy addressed the recent reorganization of the Forum as a non-profit organization.

During breaks, attendees checked out information on a variety of topics, including water conservation, small lake water quality issues and federal water monitoring programs. As a special feature, BTWF board member Dave Cole displayed his collection of original artwork depicting the beneficial uses of water over the centuries. 💧

## Benefit Concert Heats up a Snowy Evening

Ralph Rivera and his band Native Son have been described as eclectic, energetic, and highly entertaining. The band was all that and more at the Forum's first ever Benefit Concert, held March 1 in the beautiful Rialto Theater in Loveland. The City of Loveland Open Lands Program also sponsored the concert.

Heavy snow couldn't keep concertgoers away, and they were richly rewarded for braving the winter weather. Scott Allen's Red Feather Ensemble warmed up the crowd before Ralph Rivera's Native Son played two sets of their unique combination of Latin rhythms, folk and Native American flute accompanied by rich vocals.

Door prizes donated by New Belgium Brewery, the Olde Town Pickin' Parlor, Ralph Rivera, Native Son, and Scott Allen added a fun touch of excitement to the evening. The winner of New Belgium's Fat Tire Cruiser bicycle resisted the urge to ride his prize home through the snow. 💧



Ralph Rivera and Native Son rocked the Rialto Theater for the Forum. Photo by Fusebox Studio.

## National River Cleanup is Coming to a Water Body Near You!

Since its inception in 1992, 429,555 volunteers have participated in 4,738 cleanups covering 95,269 miles of waterways during National River Cleanup Week. Over 350 cleanups took place across the country in National River Cleanup 2002. A unique assortment of trash was removed from our nation's waterways including washing machines, water heaters, mattresses, truck and car bodies, oil drums, bowling pins and literally tons of cans, bottles and paper trash.

Last year the Forum helped Estes Valley Parks and Recreation District in their river cleanup. Inspired by their lead, this year we are organizing local groups to participate on May 17. We expect to start small in our first year, with plans to enlist several community and neighborhood groups, but eventually we plan to have volunteers scouring the entire watershed.

For more information or to volunteer for local efforts call Janeen Simon at 613-6974. Also visit the national website at <http://www.nationalrivercleanup.com> 💧





## What Can You Do for Water Quality?: Tips for Urban “Agriculture”

by Tom Throgmorton

*These tips are compiled from KUNC gardener Tom Throgmorton's weekly radio commentary, and are used by permission.*

**B**eginning the season with thorough lawn care will get almost any lawn through the harshest water restrictions. Bluegrass can survive on natural precipitation - it isn't pretty but it will survive. Bluegrass can be trained to have deep, drought-resistant roots by less frequent, deep waterings. Instead of leaving a sprinkler in one area for 20 minutes, cycle the sprinkler. Divide the 20 minutes into two sets of 10 minutes or even four sets of 5 minutes. Cycling pushes the water and the roots deeper.

Learn how the sprinkler system clock works. Any clock can be programmed to fit any community's water schedule. Fix any irrigation heads that are broken and any leaks. Be sure heads are adjusted so water is going on the lawn not on the street.

Aerate the lawn. Core aeration pulls plugs of soil out and lets air, water and fertilizer into the soil. The deeper the plug, the

deeper the soil is enriched. Core aeration is easiest when the soil is moist, so aerate after one of the first spring rains or snows. Leave the plugs on top of the soil. They look messy for a little while, but they break down and add nutrients back to the lawn.

Bluegrass lawns need some food to start the year. Early fertilizer also helps fescue lawns. Bluegrass needs 4 pounds of nitrogen annually, but not all at once. One pound of nitrogen spread over 1,000-sq. ft. is a good start for spring. To be more environmentally sane, try an organic lawn fertilizer. We've used one the last few years and it works great.

Mowing to keep the grass two and a half to three inches long will use less water. Even with proper maintenance there are areas of lawn that are just too hard to maintain. Eliminate them and put in the right plant or hardscape.

The extra moisture we've received this late winter is a blessing. If this moist weather pattern continues it will help us get our plants ready for the summer water restrictions. 💧

### **Sylvan Dale Ranch & CSU Partnership** *continued from p. 1*

“hinge point,” where the river shifts from sculpting mountains and carving canyons to mostly transporting materials. That fact places the Ranch in a critical position to influence water quality.

Once, ranchers simply imposed livestock on the native landscape and hoped for the best. Often “the best” was not very good. Behind barbed wire, too many animals spent too many days on too little vegetation. The results can still be seen as headward-cutting gullies with over-steepened banks, as soil degraded to mere minerals, open to invasion by alien weeds.

Range scientists are coming to realize that inserting domestic livestock into ecosystems must be done with care, and they seek to see the system whole and to design strategies for sustainable use of rangeland while maintaining the integrity of natural systems. CSU students are using cutting-edge ecosystem science to provide this vision to Sylvan Dale.

Sylvan Dale sees this as a win:win:win deal. The students win, the Ranch wins, and the future wins as well. Preserving a functioning rangeland ecosystem means preserving opportunities for guests to enjoy and appreciate the beauty of the area and to experience some aspects of a vanishing western lifestyle.

A watershed perspective is central to this holistic thinking. All things are connected. You can't do nothing. You can't even do just one thing, because John Muir was right: everything is hitched to everything else, and water is the connector.

At one level, watershed thinking is a matter of self-interest. Fly-fishing is a major attraction of Sylvan Dale for guests from across the country. More fundamentally, though, holistic stewardship represents a commitment to “the neighbors.” A watershed is an ecological neighborhood, with both public and private neighbors, human and non-human, animal and plant.

As we try to see things as a whole, we come to realize that neighborhoods are four-dimensional; they have length and width and elevation and they also have duration in time. Sylvan Dale is committed to stewardship in all four dimensions, informed by the on-going relationship with CSU. 💧

### **Watershed Planning for Agriculture** *continued from p. 4*

certain stage in plant growth (e.g., sugar beets and barley).

To achieve optimal water quality, the Forum developed a Watershed Strategic Action Plan to prioritize protection efforts. Through this planning process the Forum has identified campaigns to address the following specific pollutants of concern:

- Nutrients
- Sediment
- Pathogens, as indicated by *E. coli* bacteria

These campaigns address initiatives that educate stakeholders, influence land use management and the use of best management practices, and support reasonable water quality regulations. These campaigns are relevant for the protection of agricultural water supplies. Nutrients can be a benefit and a concern to farmers. Sediment can increase canal and pump maintenance and lower reservoir storage volume. Pathogens are a concern for workers in contact with irrigation water. The State of Colorado establishes agricultural water quality standards to protect drinking water for livestock and for irrigation. Water quality standards for recreation protect people that come in contact with and may ingest raw waters.

The Forum has also implemented a monitoring and assessment program to track water quality throughout the watershed. These efforts may identify agriculture as a source of pollutants such as sediment and nutrients. Watershed planning provides an opportunity for agricultural and urban stakeholders to understand each other's issues. Agriculturalists know their lands, operations, and restrictions best; by participating in watershed planning they can help identify the most cost-effective management practices and mitigation measures.

The Forum is taking a proactive approach to assess and protect water quality to achieve multiple benefits, including the support of agricultural uses. 💧



## Off-Stream Cattle Watering

continued from p. 1

cows defecating on the ice..."

For now, Wekam breaks the ice off each morning. To make the system less labor-intensive in cold weather, Gordon plans to experiment with several other ideas, including adding an aerator, an overflow pipe, and even a high-tech sensor that would detect the water level from outside the tank, so the switch wouldn't freeze. Gordon and Wekam are also hoping that eventually they'll be allowed to re-circulate the water.

Gordon also hopes that someday water law will change, perhaps to mimic a program in Idaho that allows ranchers to buy an inexpensive permit to pump water from the river into a stock tank, and send the overflow back to the river.

The off-channel shallow water well illustrates the role that local watershed groups can play in bringing concerned parties together to solve water quality problems. In this case, the Coalition for the Upper South Platte (CUSP) "provided the table" for discussions to begin. "There are a lot of positive things that come out of having people just sit down and find common goals," said Carol Ekarius, coordinator for CUSP. "When we say 'How can we fix it?', then people find solutions." 💧

## Water Currents

Look to this new feature of the News for brief updates on local, state, and national legislative and regulatory actions with direct implications for water quality.

### In the Colorado State Legislature:

The Senate considered SB236 which would put a measure on the November ballot to allow the issuance of up to \$10 billion in revenue bonds to finance water infrastructure projects.

The Legislature passed resolution HJR1015 to ask counties, homeowners associations and municipalities to re-evaluate restrictions on xeriscaping and other water conservation measures, but a House committee killed HB1120, which would have disallowed covenants that ban xeriscaping, lowered taxes on water conserving devices, and prevented loss of water rights due to lack of use for water conservation.

SB87, which establishes policies for encouraging water conservation, was introduced by Senator Linkhart.

Both houses passed HB1092, which directs state forests to be managed for wildfire mitigation and wildlife habitat. The Senate version removed language supporting "logging for water." The two versions still need to be reconciled.

Find more information about state legislature action at: [http://www.state.co.us/gov\\_dir/stateleg.html](http://www.state.co.us/gov_dir/stateleg.html)

## BTWF Membership Form

Name: \_\_\_\_\_  
Street Address: \_\_\_\_\_  
City, State, Zip Code: \_\_\_\_\_  
Home Phone: \_\_\_\_\_ Work Phone: \_\_\_\_\_  
Fax: \_\_\_\_\_ E-mail: \_\_\_\_\_  
Membership Type:  Private  Organization (Please complete next 2 lines.)  
Organization: \_\_\_\_\_  
Your Title: \_\_\_\_\_

Clip and mail this form to the address on the back of the newsletter, or join on-line at [www.btwatershed.org](http://www.btwatershed.org). Thanks!

## Donations

Please consider donating to the Big Thompson Watershed Forum today. We rely entirely on voluntary contributions for our operating funds. Only with your help can we continue to protect water quality. Your donation is completely tax deductible. Make your check payable to the Big Thompson Watershed Forum and mail it to us at the address on the back of the newsletter. For more information, contact Janeen Simon, [jsimon@btwatershed.org](mailto:jsimon@btwatershed.org), (970) 613-6974. In-kind contributions and volunteer services are also greatly appreciated. Thank you!

## Does your employer have a Donation Matching Program?

### In federal regulatory action:

The Bush administration issued an immediate policy guidance that would remove protections from many small streams, ponds and wetlands that appear to be disconnected from major rivers and lakes. The guidance effects at least 20% of the United States' remaining wetlands, covering 20 million acres. For more information, or to comment until April 16, visit: <http://www.epa.gov/owow/wetlands/swanccnav.html>

The EPA announced that it will require monitoring of surface water supplies that contain high levels of the herbicide atrazine, but decided against banning the chemical.

The Bush administration announced plans to allow industrial polluters to purchase "credits" from lesser polluters to cover exceedances of the Clean Water Act. The new policy uses economic incentives to enforce water quality regulations.

The EPA withdrew the July 2000 final Total Maximum Daily Load (TMDL) rule, which would have revised the agency's program for cleaning up impaired waters. For more information visit: <http://www.epa.gov/owow/tmdl/> 💧



# BIG THOMPSON WATERSHED FORUM

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THE FUTURE OF WATER QUALITY IS IN OUR HANDS

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*The BIG THOMPSON  
WATERSHED FORUM  
protects source water  
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Collins, Greeley,  
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Broomfield, Longmont,  
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to protect water  
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And...membership is  
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*To join, visit our web  
site, call, or complete the  
form on page 7 inside.*

## WET'S HAPPENING: Calendar of Upcoming Events

- April 17, 2003: BTWF BOARD MEETING:** 11:30 a.m. to 2:30 p.m., Loveland Water & Power Board Room, 200 N. Wilson Ave., Loveland.
- May 2003 (date to be determined): BTWF BOARD MEETING:** Loveland Water & Power Board Room, 200 N. Wilson Ave., Loveland.
- May 17, 2003: NATIONAL RIVER CLEAN-UP:** Volunteer clean-up of river banks and lake shores throughout the watershed. Contact Janeen Simon, 613-6974 to participate.
- May 20, 2003: FT. COLLINS CHILDREN'S WATER FESTIVAL:** A day of water activities for Poudre School District 3rd graders. Contact Young Hee Kim, 622-2317 or ykim@ncwcd.org, to volunteer.
- June 19, 2003: BTWF BOARD MEETING:** 11:30 a.m. to 2:30 p.m., Loveland Water & Power Board Room, 200 N. Wilson Ave., Loveland.

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