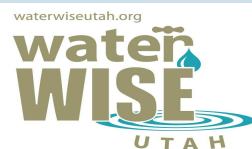


Setting aside open space now is an investment for future generations. . .



The Salt Lake County Open Space Trust Committee serves to review land acquisition opportunities for the purpose of preserving and protecting open lands with natural, scenic, ecological, cultural, hydrological or geological value located in the County for the enjoyment of its residents. Please go to our website to learn more about our achievements, goals, and how you can become involved:

www.openspace.slco.org



Public broadcasters, libraries and museums have joined together to promote the need for water conservation in Utah under the umbrella "Water Wise Utah."

The project was designed to encourage Utahns to conserve the limited water resources in Utah. The five partnering organizations: UEN, KUED, KUER, The J. Willard Marriott Library and the Utah Museum of Natural History will each promote the need for conservation.

Using a wide variety of TV and radio programs, community events and exhibits, the partnership hopes to encourage Utahns to conserve water through small, thoughtful changes in lifestyle and activities.

KUED and UEN-TV will broadcast six KUED local productions in addition to other informative water related programs. KUER will host programming as well as public service announcements. The Marriott Library is hosting a conservation collection in its Western Waters Digital Library.

The Utah Museum of Natural History will premiere "The Bear River Last Chance to Change Course" Exhibit, which opens September 15. The photo exhibit and related community activities with interactive components will travel to five targeted communities, including Salt Lake City, St. George, Draper, South Jordan and Ogden throughout the year.

A major component of the project is an expansive web site, waterwiseutah.org. Visit the web site to learn more about this project and related community events.

This project was made possible by the *Partnership for a Nation of Learners*.

An Old Timer Looks Back— and (Better Yet) Forward

By David W. Eckhoff, PhD, P.E.



Thirty years ago, I was the project manager for a countywide water quality planning effort. The end result of that effort was an Area-wide Water Quality Management Plan (208 Plan) that has guided water quality efforts in the County over the past 30 years. This past March, while overlooking the Jordan River, this old-timer was thrilled to the core. What we accomplished 30 years ago has resulted in marvelous improvements in water quality and riparian habitat along the Jordan and many other Valley streams.

What was our biggest challenge 30 years ago? While answering this question, it is important to consider the status of water quality and its management in the middle 1970s. At that time, the Jordan River was a commonly accepted open sewer—a receptacle for any drainage from the Valley. Many small

Restoring the Jordan—Partners Battle Invasive Plants to Shape Riparian Habitat for Wildlife

(continued from page 2)

with a long history of overgrazing, stream channelization, and exotic plant invasion.

With the help and interest of other agencies, sufficient funds to manage over 100 acres of critical riparian habitat were secured. A segment of Jordan River riparian habitat would be restored to sustain neo-tropical migratory birds and the wildlife that had re-occupied the area after the 1983-84 floods.

Over the last ten years, thousands of native trees and shrubs have been planted by volunteers from Tree Utah in this project area and thousands more are proposed. Great Salt Lake Audubon Society has committed to a long-term management effort for these important properties.

Unfortunately, recent development projects on the floodplain, the escalating cost of open space, and the control of exotic plant species all increase cost. I fear that only the small parcels already secured will be all that's left, a small

fraction with which future generations will work to sustain and observe wildlife. **The reality of fragmentation still looms**: some of these parcels are not connected well enough to allow migration, and some are still being disturbed by new roads or bridges.

The ongoing Audubon/Tree Utah Jordan River Ecological Restoration Project is one of the most unique and successful partnerships of which I am aware, and I am honored to be a part of it.

sewer districts and wastewater treatment facilities performed below par, with little coordination and much less future vision. I asked myself at the time, "Can any significant improvements take place in my lifetime?" In the 1970s our streams were badly polluted, and severely disturbed stream environments (caused by loss of vegetation, development, construction debris and trash) were everywhere. Wastewater treatment at that time was totally incompatible with a healthy stream and river environment. Only small, sporadic wastewater treatment plants were operated. One of these facilities was actually submerged with high flows on Thanksgiving Day—as a result, raw sewage was dumped directly into the Jordan River.

Our main objective of the 208 Project was to address the root of our water quality problems. We estimated that three larger wastewater facilities would adequately treat the increased wastewater flow and produce high-quality effluents. The plan was met with substantial resistive inertia. Fortunately, as is the case today, several elected officials could visualize, appreciate, and support these kinds of appropriate improvements: Commissioner Ralph McClure at the county level, several mayors, including Mayors Dewey Bluth of Sandy, Boyd Twigg of Midvale, Oliver Davis of South Salt Lake City, Bill Levitt of Alta, and others were supportive. Dale Bateman from the Soil Conservation District was a consistent ally and long-term friend. Without this wholehearted endorsement, we could never have developed the program that has led to the improvements we are seeing today.

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The ongoing Audubon/Tree Utah Jordan River Ecological Restoration Project is one of the most unique and successful partnerships of which I am aware, and I am honored to be a part of it.

Want to know more?

Read the full version of this article, & learn more about riparian ecology in SL County: visit www.waterresources.slco.org

Ecological Restoration Contacts:

Tree Utah's Vaughn Lovejoy: 598-2344
GSL Audubon's Keith E. Johnson: 467-6497
Dr. Ty Harrison, author: 255-3167



Salt Lake County Public Works
Flood Control & Engineering Division
Water Resources
Planning & Restoration Program
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Salt Lake City, Utah 84190

Digital copies available.
email sabeck@slco.org
We welcome submissions!

Watershed? Why Bother?

Here Are Our Top Five Reasons

—River and stream corridors in the Southwestern US support higher plant and animal diversity than all other western habitats.

—Roughly 26% of Salt Lake County residents get their drinking water directly from the Wasatch Mountains.

—The Wasatch Mountains contain some of the most heavily used recreational forest in the nation. Recreation opportunities drive and support our local economy.

—Healthy wetlands in riparian areas mitigate the effects of flooding.

—The water quality of stream and groundwater systems affects the health of people who live and recreate around our waters.

As exciting as it is to see the positive changes that have taken place over the last 30 years, the next 30 years promise to deliver even more striking improvements in our precious aquatic environments. I foresee a time when trails and pathways will lace the Valley, providing citizens with access to all kinds of water-related recreation. **A significant part of that recreational experience will be the improved diversity of the aquatic ecosystem.** These amenities will be a solid component of a healthy urban lifestyle that so many of us find essential. We have evolved, and I see that evolution continuing far into the future.

The county's Water Quality Stewardship Plan (WaQSP) will be a vital element in our achieving the future we desire. I see many of the same ingredients in this plan that made the 208 Project a success. County Mayor Corroon and Murray City Mayor Dan Snarr show great political support. Further, the county staff and their consultants represent the cream of the crop of available professionals. We have already witnessed the adoption of a membrane process wastewater treatment facility for the new installation in Riverton. This facility will be capable of producing a near potable quality effluent. What an impact this will have on future water quality!

This old-timer has tears in his eyes.



Salt Lake City is fortunate to have high quality sources of drinking water in such close proximity to our city. Stream flow from City Creek, Parley's, & Big and Little Cottonwood Creeks travels down the canyon, through the treatment plant and to our faucets in less than 24 hours!

SLC and the U.S. Forest Service are excited to promote the watershed education program called "Keep It Pure." It includes signage, print media, and new 4th and 9th grade activity guides for students. It is critical to protect our watershed areas such that SLC Public Utilities can continue to supply high quality drinking water.

Since SLC is among the fastest growing cities in the West, pressure on adjacent wild lands and watersheds is rapidly increasing. Projects like "Keep It Pure" play a valuable role in educating our communities to help protect our water quality.

Our primary goal is to create awareness, educate, build stewardship, and change behavior to protect our drinking water sources in City Creek, Parley's, Big Cottonwood and Little Cottonwood Canyons.

Teacher Workshops

Teachers in SL County school districts are invited to attend a 4th or 9th grade "Keep It Pure" workshop. Attend to become familiar with our programs and experience the activities first hand. Contact Vanessa Welsh at 483-6884 for details and dates!

The views expressed within this periodical are those of the authors, not necessarily those of Salt Lake County, the Salt Lake County Mayor, the Division of Flood Control and Engineering, or any other entity.

the Watershed Watch

Fall 2007

Vol 1 . Issue 1 .

The Big Picture

By Yael Calhoun

When you turn on your tap, do you know where the water comes from?

It is a simple question, although the answer grows more complicated each year. For most people, water comes from a water treatment plant, but where does the plant get water? Is the water source clean? Is there an unlimited supply of water? Can we support an ever-increasing number of people in Salt Lake County without significant conservation measures? An increasingly important question is where does our water go after we use it? And still the questions are not done.

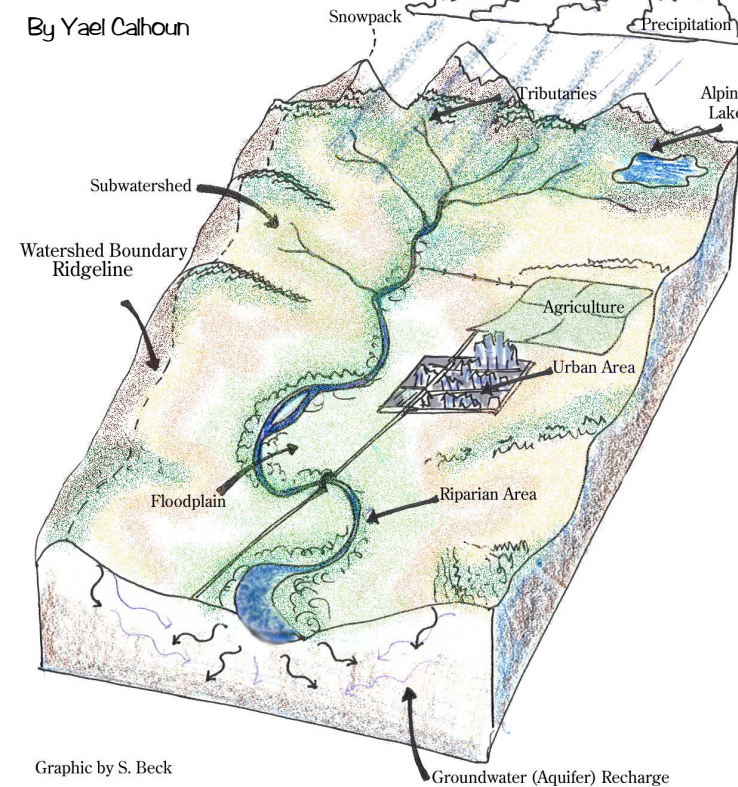
What is a Watershed?

A watershed is the land area that contributes, or drains, water to a water body, like a stream, river, or lake. Think of a bathtub drain: water naturally drains to the lowest point, so too rain and snowmelt drain to low-lying areas, filling streams, lakes, and underground aquifers. A watershed is the land over which this water drains, and water transports all sorts of sediments and pollutants as it flows.

In Salt Lake County, it is easy to see our watershed boundaries. The Salt Lake Countywide Watershed is bounded on the east by the Wasatch Mountains, on the west by the Oquirrh Mountains, and on the south by the Traverse Range. All of these areas drain to the Jordan River and the Great Salt Lake.

Why is a Watershed Valuable?

The value of the watershed lies in the fact that clean water is a limited resource. As the population grows, human needs compete with the water needs of all ecosystems, including our forests, wetlands, and lakes. Pollution



Graphic by S. Beck

in a watershed costs millions, even billions of dollars, in loss of revenue and clean-up costs.

What are Watershed Issues?

Science has shown us that water resources need to be considered in the context of the watershed. An example of policy reflecting this understanding is the U.S. Environmental Protection Agency's watershed management approach to water protection that now takes the 'big picture' approach.

Science has also shown that surface and groundwaters are connected, making the watershed management approach even more important to protecting our limited water resources. But the key question grows more important each day: who, or what, gets the water in your watershed?

Why do we care?
All living things- people, plants, and

animals, need water. We are all connected- if our rivers and drinking water are polluted, the whole ecosystem is damaged.

What can you do?

We are all stewards of our watershed. The choices we make on a daily basis affect both the quality and quantity of water in our watershed. When we choose to over-water our lawns or change our oil in the driveway, we directly affect the health of our watershed.

Go to www.waterresources.slco.org to learn more about being a good steward of our watershed.



Yael Calhoun, a former environmental planner, teaches Environmental Biology at Westminster College and is the author of books on environmental issues.

JRWC Mission:

The Jordan River Watershed Council is dedicated to the ecological and economic sustainability of the Salt Lake Countywide Watershed through the promotion of stakeholder involvement.

Watershed Stewardship — OUR COLLECTIVE RESPONSIBILITY

By Mayor Peter Corroon

With the population of Salt Lake County soaring to more than one million last year, the need for ongoing and short-term planning of our natural resources becomes extremely urgent. In that vein, Salt Lake County is currently working on the development of a Countywide Water Quality Stewardship Plan (WaQSP). This Plan represents a three-year cooperative effort between the county, the cities, and stakeholders to manage, protect, and restore countywide water quality. This ambitious undertaking is the first update of a countywide water quality plan since the one started when Cal Rampton was governor in the mid-1970's. This critical planning update is clearly overdue and a big piece of the overall environmental strategy of Salt Lake County. A draft plan will be complete by the end of 2007.

The WaQSP will address such issues as: instream water quality, wastewater planning, the management of Utah Lake, preservation and restoration of stream corridors, aquatic and terrestrial habitat, stormwater, and nonpoint source pollution. Additionally, this plan will provide a framework of goals and policies that will forge water quality stewardship consistent with Congressional goals, but representative of needs of the local population. Above all, this Plan will assist both regulatory agencies

and private citizens in identifying ways to be good "stewards" of our environment. It is my belief that stewardship resides in the hands of all those who live, work, and recreate in our watershed. This is our collective watershed, our collective responsibility.

As such, we recently conducted a survey to characterize public understanding of water quality in our watershed, knowledge of river and stream corridors, recreational activities within the watershed, and preferred funding mechanisms for maintaining and improving the watershed. With the results from this survey in hand, we anticipate a major outreach effort in 2008 as we seek public review and comment on the WaQSP. Additionally, we will seek public involvement in the selection of preferred stewardship strategies.

The quality of our watershed has an enormous impact on the quality of life for all Salt Lake County residents. That's why the County is committed to working toward revitalizing and preserving streams, rivers and corridors, such as the Jordan River as well as all watershed areas in the county.

I urge everyone in Salt Lake County to become familiar with all the issues surrounding water quality in our county. To do so, come to our **Watershed Symposium** on October 3rd and 4th at the South Towne Expo, or visit our website (www.waterresources.slco.org). We are all stakeholders, all stewards, in our local watershed.

An Urban-Wildlife Dilemma: the Jordan River

Dr. Ty Harrison: ecologist, botanist, restoration consultant & landowner on the Jordan River

The dilemma of wildlife on the Jordan river is complex. At its heart lies a question: **"how much open space is enough?"**

Other questions arise— How can we ensure some sort of nature experience for our grandchildren? **How big does a natural area have to be to sustain wildlife for the future?** How can we help restore and manage these areas to allow wildlife to move through and migrate between these valuable places?

According to a report on the Jordan River authored for the Great Salt Lake Audubon Society and the Utah Reclamation Mitigation and Conservation Commission (URMCC), human alterations of stream hydrology (including habitat fragmentation) combined with a massive invasion of exotic plants, has caused a downward ecological spiral in the Jordan River Corridor.

In 1983 and 1984, after two successive years of flooding along the Jordan River, the floodplain pastures on the East side of the river between Little Willow Creek (11400 S.) and Dry Creek (9200 S.) were spontaneously "re-planted." Rare flooding events allow the establishment of native

cottonwood and willows on bare, muddy overflow areas of the floodplain. Unlike previous floods, this time the water deposited a mixture of exotic plant species in the pastures alongside the usual natives.

Several noxious plant species, like Russian Olive trees and Tamarisk, an array of invasive thistles, Queen Anne's Lace, Teasel, and Poison Hemlock—all exotic—sprouted vigorously amongst the native trees and shrubs. These populations have slowed the re-establishment of the native species upon which wildlife depend.

The past 20 years of native and non-native vegetation has developed into dense cover, which has attracted a whole new animal community. Mule deer, elk, foxes, skunks, voles and weasels (even marmots) have re-occupied this stretch of the Jordan floodplain, hiding in the overgrowth.

Unfortunately, the vigorous and competitive Russian Olive and Tamarisk have outgrown native tree seedlings. This process threatens the native overstory and open shrub understorey, optimal for the breeding of migratory birds.

One developing success story, the **Great Salt Lake Audubon & Tree Utah Jordan River Ecological Restoration Project**, is an attempt to restore 120 acres



Belted Kingfisher
Montana Fish Wildlife & Parks

(Continued on page 4)

Where Do We Draw the Green Line

Non-profits, Governments Work to Protect Open Space; Private Money Creates Tough Competition.

By Dr. Arthur Morris
Riparian Ecologist

Stream and riparian preservation issues motivate serious attention nationwide, the U.S. Geologic Survey (USGS) identified urban growth and protecting water sources as two of the top 10 scientific challenges for the 21st century. As the National Research Council suggested in 2002, "restoration of riparian functions along America's waterbodies should be a national goal."

Natural riparian areas connect land and stream to support desirable ecosystem qualities like clean water, diverse habitat structure, productive soils, high biodiversity, and thermal refuge. Utah Partners in Flight and the Utah Division Of Wildlife Resources consider riparian areas top priority habitat for conservation in Utah.

Not surprisingly, as urban areas are increasing in size and density, issues like urban growth, protecting water sources, and restoring riparian areas are all on the government agenda. Salt Lake City, like other western cities, faces tough choices.

One example: Wasatch Hollow Community Park (1650 E and 1700 S), serves the SLC metropolitan area as a 15-acre parcel of rich open land. Across the stream from the

park's southern end, two acres of private, quality open land were recently sold to a developer. **An 8-home subdivision will replace this fragile and valuable portion of stream corridor.**

Competition between development and conservation can create upsetting and complex outcomes. In the case of Wasatch Hollow, Salt Lake City offered to purchase this land at the appraised value as part of their watershed program (both Salt Lake City and Salt Lake County set aside funds to acquire open space).

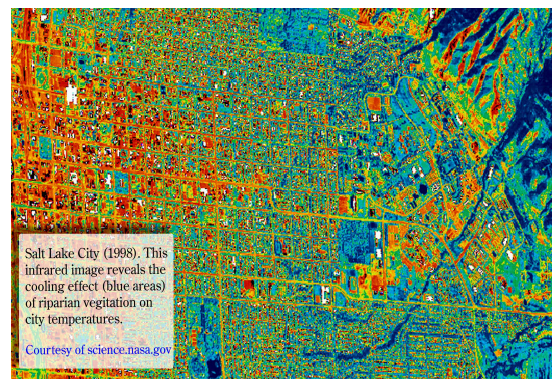
However, the owner opted for a higher offer from a real estate developer, which included sale of the previous owner's residence. In our hot real-estate market, high speculative values reflect an assumption that city planning and master plans loopholes can be exploited to allow additional development, even in environmentally sensitive areas.

The Wasatch Hollow subdivision will interrupt the sensitive stream corridor, which interacts with Emigration Creek more directly than any other portion of the landscape. Although future residents may enjoy the soothing sound of stream waters, their luxury has its price: loss of habitat, constriction of the natural stream meander, and increased exposure to pollutants from surface runoff endanger the stream corridor, and would permanently diminish the parcel's open space value.

Many stream corridors in Salt Lake County have already been

developed, but Wasatch Hollow and other areas may yet be conserved. Ultimately, development decisions rest in the hands of those who vote and actively participate in local government land use decisions.

When seen as part of a bigger picture, the irreplaceable losses suffered by the stream corridor's *existing* residents— bird, mammal, insect and microorganism alike— may instruct us on the shortcomings of urban planning, and the drawbacks of growth.



Salt Lake City (1998). This infrared image reveals the cooling effect (blue areas) of riparian vegetation on city temperatures.
Courtesy of science.nasa.gov

For Updates, Email:

Dan Jensen, Wasatch Hollow Community Council:
DanielBJensen@comcast.net

The Salt Lake Countywide Watershed

WaQSP



WATER QUALITY STEWARDSHIP PLAN

Seven Targets (abridged)

- 1: Reduce pollutant loads to improve water quality to support aquatic habitat, water supply & social functions.**
- 2: Develop regional wastewater planning procedure requirements to enhance, improve and protect water quality functions.**
- 3: Evaluate and prioritize the effects of Utah Lake outflow and diversion canals on water quality and flow by developing optimized management protocols.**
- 4: Improve and protect wetlands and stream bank stability to prevent degradation from erosion and sediment transport.**
- 5: Increase stream corridor and watershed recharge area preservation to improve habitat, social, recreational and water use functions.**
- 6: Increase in-stream flows under normal and drought conditions to support aquatic habitat and recreational functions.**
- 7: Identify funding mechanisms for plan implementation, long-term watershed monitoring and ongoing adaptive management.**

THE SALT LAKE COUNTYWIDE WATERSHED SYMPOSIUM

Salt Lake County is hosting the first annual Salt Lake Countywide Watershed Symposium October 3 and 4, 2007 at the South Towne Expo Center in Sandy. The Symposium is a **free** two-day event that will feature presentations by local water quality experts, panel discussions and field trips exploring pertinent issues surrounding water quality and watershed stewardship in Salt Lake County.

The Symposium is designed for the general public, management agencies, environmental activist organizations, students and those working in water quality professions.

Mayor Peter Corroon will address key County water quality planning issues during the noon hour of the opening day. Although the event is free, if participants choose, they may purchase two lunches for \$20.

Topics to be discussed at the symposium include water-based recreation opportunities, how recreation in the mountains and along streams should be managed to optimize watershed stewardship, open space and land acquisition, volunteerism, personal stewardship, and land use planning.

More technical sessions on headwater protection, invasive species, and contaminants in our

waterways are also planned. Other issues such as socioeconomic benefits of water quality and watershed health will be discussed as well as how to pay for and manage future water quality planning and implementation.

Field trips on the afternoon of October 4th include Jordan River restoration sites, one of the major wastewater treatment facilities in Salt Lake County, the recently completed Bingham Canyon Water Treatment Plant that employs reverse osmosis technology, and a trip to Alta to view a pilot abandoned mine management project that uses natural wetland functions to remove zinc and other metals from entering Little Cottonwood Creek.

More on the Symposium @ www.waterresources.slco.org

To register, contact:

Sarah A. Beck | 468-2796 | sabeck@slco.org

A Bureaucratic Bind: Debris or Fish Habitat?

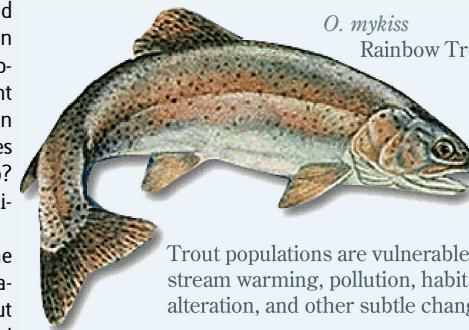
The SL County Flood Control Staff Discuss a Recent Stewardship Impasse on Parley's Creek

Salt Lake County Government wears many hats and has a multitude of responsibilities. Among them are flood control and water quality, mitigation and prevention of flood damage to public and private property, and the preservation/enhancement of surface and groundwater quality. When the individual maintenance worker sees debris in the stream; what should they do? How should they do it? This is the dilemma.

The Situation. A few months ago, the Salt Lake County Flood Control Operations group received complaints about debris building up on trash racks located above I-80 and below Parley's Park (2700 East 2760 South). The racks were blocked and could potentially cause flooding. In addition, the area up stream was inspected and found to be, in the maintenance worker's opinion, "chucked full of debris."

The Dilemma. The maintenance worker knew that if something was not done, in high flows this debris could wash downstream, block the trash racks at I-80, and flood the adjacent power substation. The debris could also block the trash racks below Hidden Hollow and flood the mall and City Library, or the debris could block the trash racks by the Granite Ward and flood the IHC Care Facility on 900 East. What should the maintenance

worker do? What did he do? He, with his supervisor's approval, did the wrong thing.



O. mykiss
Rainbow Trout

Trout populations are vulnerable to stream warming, pollution, habitat alteration, and other subtle changes.

Image courtesy of Alberta Sustainable Resource Development

The Choice. The Flood Control Operations group removed a number of trees to provide access to the Creek. Once in the Creek, the group used the smallest piece of equipment they have, the size of a Tonka Truck, to remove snags, debris and trash from the stream.

The Result. In the act of removing trees and debris, the worker attempted to reduce the risk of flooding; however, he also damaged the local riparian and aquatic habitat. Specifically, debris provides highly prized cover for fish and according to some can help stabilize the banks. When the debris was removed from Parley's Creek, fish habitat was destroyed. Although this act was done to reduce flood potential, the

problem was not eliminated. The majority of debris remains and the flood potential persists.

Although this event has been debated in the local newspapers, between government agencies and amongst environmental activist organizations, the crux of the concern remains unanswered. How can we accommodate the need to prevent flood damage from high flows and the need to preserve and enhance the ecosystem? Habitat and private property rights? These aren't simple questions, nor are there simple answers; however, with the assistance of local experts, the correct training of individual maintenance workers, and an informed public, these issues can be addressed and an acceptable plan can be put together.

We can't make thoughtful choices about flood control, or other water quality and watershed issues, without an honest examination of the situation that we face. This is one of the reasons Salt Lake County is hosting the first Watershed Symposium (October 3rd and 4th at the South Towne Expo Center), to provide an opportunity for the public, environmental advocacy, academic and technical communities to explore the issues, identify the choices, and discuss the solutions. Only through understanding can we work together to be effective stewards of our local watershed.