

# the Watershed Watch

Newsletter of Salt Lake County Watershed Planning & Restoration

Winter 2017/2018, Issue 17

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## Upcoming Events

Intermountain Sustainability Summit  
Weber State University  
March 1-2 (Ogden)

2018 Climate and Health Symposium  
SLCo Health Department  
April 25-26 (West Jordan)

2018 Great Salt Lake Issues Forum  
FRIENDS of Great Salt Lake  
May 9-11 (University of Utah)

UGIC Conference 2018  
Utah Geographic Information Council  
May 7-11 (Vernal)

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and Restoration  
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[slco.org/watershed](http://slco.org/watershed)



## Exploring restoration on the river

New signs highlight restoration sites that use natural channel design

by Watershed Planning & Restoration  
Program staff

As you explore the trails along the Jordan River, keep an eye out for new signs that focus on river restoration projects completed by Salt Lake County's Watershed Planning & Restoration Program. Specifically, how the Watershed Program is using **natural channel design** to repair damaged streambanks and restore natural function to the river. Learning how large tree roots protect streambanks and create shelter for fish, or how native streamside plants are vital to the health of the river, are just a few of the things you might take away from the signs.

Also highlighted are the restoration techniques used, why they were needed, and plants and animals you might spot at the restoration areas.

### Restoring the river to a more natural form

When left to their own devices, rivers are dynamic. Banks move as erosive forces shape and reshape the channel and floodplain. Soils scour here and deposit there, in a healthy (stable) balance. But when development and stream alterations put stresses on natural stream systems, erosion can accelerate beyond the norm. Urban streams are often eroded so deeply,

*(continued on page 2)*



New interpretive sign discusses the major river realignment and bank restoration project completed in 2011 at Jordan River Rotary Park (12600 S). This project repaired erosion that was threatening to destroy part of the Jordan River Trail!

**NEW SIGNS AT RESTORATION SITES**  
(continued from cover)

that they are no longer connected to their floodplain, except during the most extreme flood events. This leads to unstable banks, excess sediment clouding the water, and degraded water quality. Natural channel design uses the principles of fluvial geomorphology (the processes and pressures that shape river systems) to evaluate the potential for a degraded stream system to be restored to its historic stable form.

Much of the Jordan River's historic floodplain has been impacted in one way or another. Keeping development out of the floodplain in the first place is ideal, but not often a reality. With excess erosion an ongoing issue along urban rivers, protecting trails, roads, homes, etc. takes precedence. With natural channel design we can address erosion in a way that balances the need for safety *and* the health of the river. Using natural materials (trees, shrubs, logs) to stabilize streambank soils, the restoration blends into and becomes part of the landscape over time. Expensive rock and bank hardening techniques are not always needed.



Once an aggressively eroding bank, native plants now thrive on this reconstructed streambank located at approx. 4850 S on the Jordan River. Deep roots stabilize the soils while stems and branches at the water's edge reduce floodwater energy.

**Get out there and explore**

As fall transitions to winter, when leaves are off and river levels are low, it's a great time to be able to see the reconstructed banks and floodplain terraces. We discuss these and much more in the eight new interpretive signs (and seven photo monitoring stations, see sidebar) at the following restoration sites:

- Murray-Taylorville Project (5 signs, from 4800 S to 5100 S)
- Walden Park (5400 S)
- Winchester Park (6500 S)
- Jordan River Rotary Park (12600 S)

Some signs are along the main trail, and some can be found on unpaved side trails. Look for the "Stream Restoration on the Jordan River" banner and our Watershed logo to identify the signs. The ultimate goal of this project was to create awareness of stream restoration techniques used, why they were needed, and how they can improve the river ecosystem...for both wildlife and humans!

*Funded by a grant from Jordan River Commission and Utah Division of Forestry, Fire, and State Lands; designed in-house by Watershed Program staff. □*



**Monitoring ecological change with smart phones and social media**

We're turning Jordan River Trail users into a remote sensor network! It's simple: Put up a sign asking people to set their cameras or phones in an angle bracket, take a photo, and post it with a site-specific hashtag to Twitter. Then harvest the photos and create timelapse views of change over time.

While developing the interpretive signs at our river restoration sites [see cover], we saw an opportunity to expand the project to include these "self-serve" photo monitoring stations. In a nutshell, we're encouraging trail users to get involved in the process of monitoring the restoration areas.

Development of the online tool that will publish timelapses on our website is in progress. Stay tuned!

# Why wood? Large dead trees buried deep in the streambank protect against erosion

by Watershed Planning & Restoration Program staff

Construction wrapped up this November on the third and largest phase of the Murray/Taylorville Restoration project, located on the west bank of the Jordan River at 5200 South. This is Salt Lake County Watershed's most recent stream restoration project. As with the first two phases, the goals for Phase 3 included:

- Stabilize an unstable, eroding bank while building a floodplain.
- Create a riparian area that will support native trees and plants.
- Increase resilient habitats for fish, and local and migrating birds.

**Toe-wood structures** were used to stabilize 750 feet of eroding bank. Soil wrapped in coir fabric forms the new floodplain, which ranges from 20 to 60 feet deep. Altogether over 6,500 native trees and shrubs were planted in this reconstructed riparian area, and the upland was seeded with native grasses and wildflowers. TreeUtah pitched in to help plant 2,975 willows and 25 cottonwoods during two volunteer days.

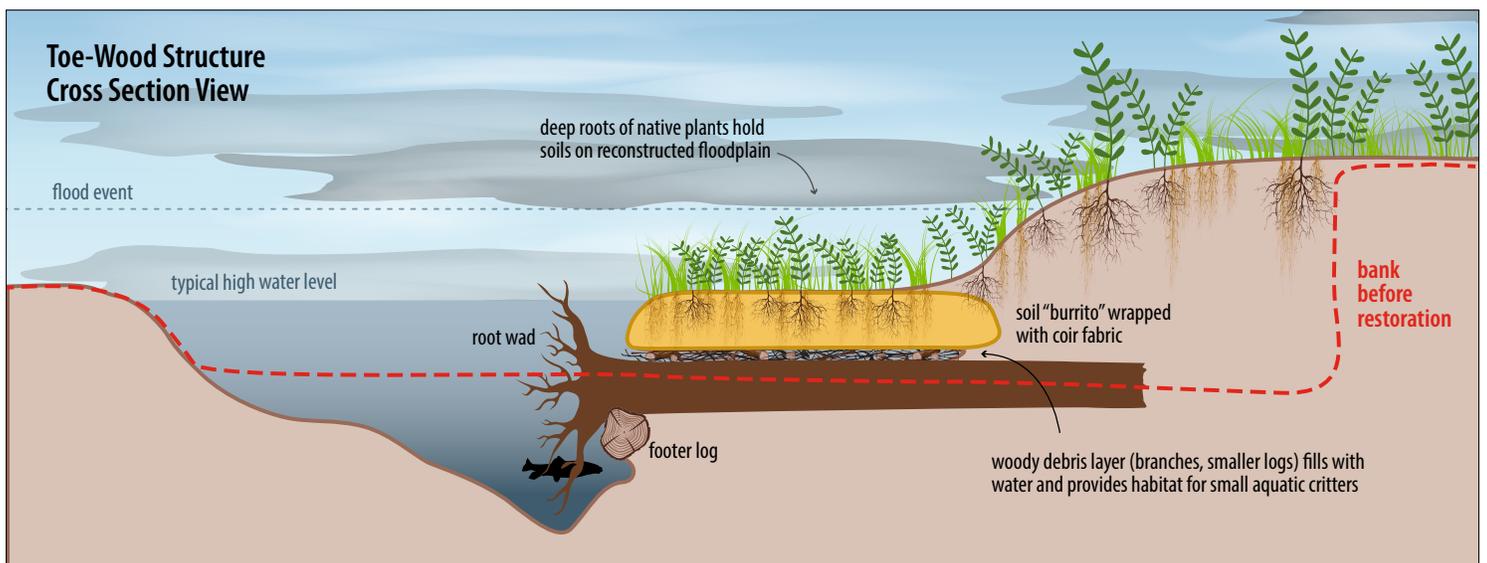
Installed with one end extending out into the river, the structures catch the current to reduce its erosive force.

This protects the bank and while providing healthier fish habitats. The newly built floodplain will be able to accommodate higher river flows, allowing floodwaters to slow down and deposit their beneficial sediments. And the added foliage will provide "roughness" that also helps to dissipate the energy of floodwaters.

Maintenance and monitoring will continue over the next several years, including chemical and mechanical removal of invasive plants. Once established, the native plants will be better able to hold their own against invasive plant species. □



Over 150 logs were used to build the toe-wood structures in the Watershed Program's most recent Jordan River restoration project (located at 5200 S).



A toe-wood structure is used to restore a stream's ideal width and depth, provide valuable habitat, and create stable banks that are protected against excess erosion. It's a natural channel design technique that can replace expensive rock and bank hardening.

# Following the flow

## Updates to Salt Lake County's stream & rain gaging program

by Watershed Planning & Restoration Program staff

Knowledge of the flow of water in our streams plays a vital role in flood protection, water supply, pollution control, and environmental management. Salt Lake County's Watershed Program currently maintains a network of 33 gaging stations placed strategically throughout the watershed, including 18 stream gages and 15 rain gages. These gages send ALERT (Automated Local Evaluation in Real Time) radio transmissions to a base station at the Salt Lake County Government Center, where signals are decoded and then displayed as real-time data (water level, discharge, and precipitation) on our website.

In the last few months the Watershed team has updated equipment in all 15 rain gages, including new tipping buckets, power and data cables. Transmitters will also be replaced in spring 2018. With the new external equipment, replacing transmitters

guarantees that accurate ALERT data will continue to be transferred from each location to the database processing real-time rainfall and precipitation events. In addition, three gages were relocated to improve the data signal reception and resolve safety issues.

2018 also brings three new stream gages! With funding from the Jordan River Commission, the Watershed Program will install two in lower Parleys and Emigration creeks, and one on the Jordan River (exact locations to be determined).

Salt Lake County's stream and rain gaging program website is an excellent resource for stream and precipitation data. End of year reports for the 2017 water year, running from October 2016 to September 2017, are available online at <https://rain-flow.slco.org>.

Looking for more information? Contact our hydrologic technicians, Alex Hamilton, [ahamilton@slco.org](mailto:ahamilton@slco.org) or Hannah Murphy, [hmurphy@slco.org](mailto:hmurphy@slco.org). □



Watershed Program hydrologic technician comparing flow measurements taken in the creek to the most up-to-date rating curves (gage at 300 West on Little Cottonwood Creek).



## Another great Watershed Symposium, thank you!

The 11th Annual Salt Lake County Watershed Symposium (November 15-16, 2017) was chock-full of unique learning opportunities, great speakers, and thought-provoking presentations.

If you missed any sessions, presentation files are available on the [website](#), including powerpoints and audio recordings. Take a look and a listen

Also, there's still time to take the [follow-up survey](#). Tell us what you liked and what we can improve. Your feedback is important.

Visit the Symposium website, <https://2017watershedsymposium.sched.com>

Save the date for next year  
November 14-15, 2018

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