

News and Highlights of Creeks and Communities: A Continuing Strategy for Accelerating Cooperative Riparian Restoration



“Happy New Year”
A message from
Steve Smith, NRST Team Leader

Welcome to the 2013 winter edition of Full Stream Ahead!

Hopefully the new year finds you all well. We were joking just the other day that mid-winter used to be a time to slow down a bit and catch up on things we have been putting off – my how that seems to have changed for all of us! Although I know you all have plenty to do, please take a moment to look at the articles in this issue.

Included in this issue is an interesting summary of data collected last year on one of our own little backyard streams I’m sure many of you have heard about – Bear Creek. Also included is a summary of last year’s Tamarisk and Russian Olive Grazing Management Training and a list of riparian road references that you may find useful.

We have started to schedule riparian training sessions for the coming summer. Currently, we are planning for Multiple Indicator Monitoring training in Utah, New Mexico, South Dakota, and Montana, a week-long PFC for Professionals course in Arizona; and Grazing Management for Riparian Areas in Washington and Colorado. The next issue of FSA will include dates and enrollment details for these and other training opportunities that become available as State Teams schedule their sessions. Also, please see the notice in this issue calling for sponsorship of the Grazing Management for Riparian Areas course.

That’s all for now; happy reading and thanks for all you do. Please keep in mind that if any of you ever need us to provide letters of support or telephone calls on your behalf for your work in Creeks and Communities, let us know. I can be reached at 541-416-6703 or sjsmith@blm.gov.

Sincerely,

Steve

Proper Functioning Condition Technical Reference Revision Update

An article in a previous issue of FSA introduced the core team, process, and timeline for revision of *TR-1737-15 (1998), A User Guide to Assessing Proper Functioning Condition and Supporting Science to Lotic Areas*. The purpose of the revision is to provide agencies and organizations with an updated technical reference that:

- ◆ Incorporates the most recent riparian references and information applicable to PFC;
- ◆ Improves clarity and facilitates a greater understanding of riparian functional processes;
- ◆ Provides additional detailed instructions for completing the PFC process, and;
- ◆ Explains how to incorporate PFC assessment into an integrated management framework.

To date, the process and timeline are on track. The revision team recently completed a draft of *TR 1737-15 v.2, Proper Functioning Condition Assessment for Lotic Areas* that is currently being distributed for review through both formal channels of the BLM and Forest Service and informal channels to individuals from federal and state agencies, universities, and the private sector. Reviewers are being asked to consider and comment on the following:

- ◆ Is the technical content adequate to support the assessment protocol? Is there additional science, or are there techniques, etc., that need to be incorporated? Are the references adequate and appropriate?
- ◆ Is there a logical progression from one concept to another? Is the presentation of instruction clear and easy to follow, or are there areas that are confusing?
- ◆ Is the intended use of this assessment clearly articulated? Is the approach reasonable and feasible with current budgets, skills, and time requirements?

Reviewers will find that, although there are very few changes to the fundamentals of conducting a thorough PFC assessment, the new document provides an extensive rewrite of the original. Anyone interested in reviewing the TR and providing comments is encouraged to contact Melissa Dickard (BLM National Operations Center) at mdickard@blm.gov or 303-236-0473 to obtain a copy of the document and comment form.

Prineville BLM's Bear Creek Case Study Continued: 2012 Cross-Section Survey

Many in the Creeks and Communities Network draw from the long-term BLM data and photos of Bear Creek, in central Oregon, to teach riparian concepts. Recently, Mike McKay, Prineville District Hydrologist, completed some additional survey work, adding to the data on the Bear Creek system. Information was gathered at river mile 4.75 at 3500 feet elevation where precipitation averages 12 inches per year. Peak runoff occurs in February, and runoff events from summer thunderstorms are fairly frequent. However, before you read more about this effort take the following short quiz to test your knowledge:

QUIZ: Surveying Channel Cross-Sections (answers at end of article)

1. When surveying, left and right bank are always identified facing upstream or downstream?
2. Which stake is the zero end of the tape or tag line attached to, the right or left stake?
3. If the stream being surveyed is so wide that a tape sags excessively, what should you do?
4. Where can you go to learn about surveying note-taking format standards and cross-section survey procedures?

The Bear Creek case study has been used extensively to demonstrate how riparian vegetation can interact with soil and water to affect channel dimensions, floodplain formation, and overall riparian function. Livestock management changes were initiated in 1977 in an attempt to restore the productivity and physical function of the riparian area; however, monumented cross-sections were not installed and surveyed until 1983 to measure the type and rate of recovery occurring. In 2002, soil pits were dug through fine-textured recent deposits to find the hard gravel layer that made up the channel bed and is visible in the 1977 photos. The soil excavated from the pits included layers of clay loam, sandy clay loam, clay, and silt loam until a hard layer of gravel was encountered. The elevation of this gravel layer at the bottom of the soil pits was surveyed and it was assumed to be the 1977 channel bottom.

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The river mile 4.75 cross-section was resurveyed in September 2012. Survey results show that between 1977 and 2012, the channel bottom and floodplain at that location rose 2-2½ feet in elevation, the channel narrowed, and streambanks were rebuilt (Figure 1). These changes started with improved riparian vegetative conditions from changes implemented in the livestock grazing system. As strong-rooted riparian vegetation expanded, it buffered the forces of water during floods, held soil in place, captured more sediment, and added organic matter to the soil, which led to the elimination of excessive erosion that had been occurring during floods.

The Bear Creek cross-section PowerPoint slides have been updated for Network use, and are available on the [NRST/Creeks and Communities website](#) for download, or are available via email upon request.

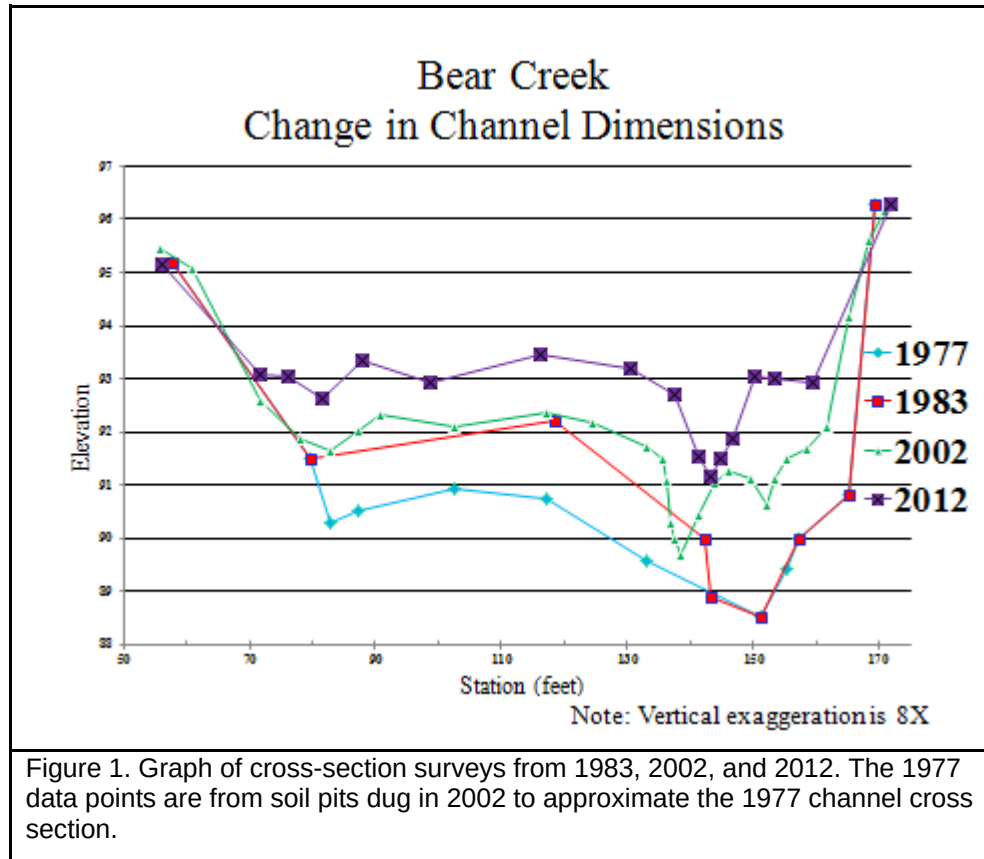


Figure 2 contains six photographs from the Bear Creek photo series that demonstrate the channel and floodplain changes that occurred from 1977 to 2012. In 1977, riparian vegetative cover was not adequate to protect banks and dissipate energy during high flows, streambanks were actively eroding, and the channel was overly wide. By 1986, the channel had narrowed considerably because riparian vegetation trapped sediment and rebuilt the streambanks. In 2004, Bear Creek was dammed by sediment from an ephemeral tributary just below river mile 4.75 as a consequence of an intense summer thunderstorm. It took Bear Creek two years to cut a channel through the tributary-mouth sediment. During that time, the blockage ponded water and caught sediments above it. Reestablishing a channel through it did not cause a headcut, so the sediments that were laid down in the pond are now stabilized by the current riparian vegetative cover.

Cross-section data and repeat photography, in combination, tell more of the story than either one in isolation, especially the part about water storage. Water that inundates a functioning floodplain is slowed by roughness elements such as vegetation. Part of the flood water infiltrates into the soil and occupies the pore spaces between soil particles or is held by organic matter. This stored water is used by riparian vegetation or drains slowly back to the stream channel providing base flow. On Bear Creek, since the floodplain and channel bottom have risen 2-2 ½ feet, there is more floodplain soil, more soil pores, more organic matter, and thus more volume and capacity for the storage of water after floods. This is “keeping water on the land longer,” sustaining the functionality of the riparian area and stream. And in turn, improving the productivity of the land for all the many values we place on Bear Creek such as fish and wildlife habitat, forage production, control of sediment to keep it out of a downstream reservoir, maintenance of base flows, and aesthetics.

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A. August 1977 – Little riparian vegetative cover present to protect banks and dissipate energy during high flows, resulting in eroding streambanks and an over-widened channel.



B. March 1986 – A change in livestock grazing management which started in 1977 led to an increase in riparian vegetative cover and formation of streambanks and floodplains.



C. July 2004 - Bear Creek downstream of river mile 4.75, showing the blockage created by a March 2004 thunderstorm on the ephemeral drainage.



D. July 2004 – The ponded section above the blockage.



E. May 2006 – The high flows in 2006 cut a channel through the blockage. No headcut was started.



F. September 2012 – The additional sediments that were deposited in the pond are now stabilized by the current riparian vegetative cover.

Figure 2. Bear Creek photo sequence showing changes in riparian vegetation, floodplain, and channel characteristics. Photos taken at or near river mile 4.75. The red oval shows the location of the same tree for reference.

Management of healthy riparian areas involves working with communities to create a common vision of what their riparian areas need to capture, store, and more slowly release water over time. Through this learning process, people are rediscovering that the largest fresh-water storage area in the world is not a lake or a reservoir, it is the soil. That is what the Creeks and Communities strategy is all about. If you use the Bear Creek case study cross-section information during your riparian workshops, go to the [NRST/Creeks and Communities website](#) to download the updated cross-section PowerPoint slides.

Answers to Quiz:

1. Left and right bank are always identified facing downstream.
2. The zero end of the tape or tag line is attached to the left stake.
3. Use a tag line that can be stretched straight, or if available use a total station that electronically measures distance.
4. Harrelson, C.C., C.L. Rawlins, and J.P. Potyondy. 1994. Stream Channel Reference Sites: An Illustrated Guide to Field Technique. It is available on the web at <http://stream.fs.fed.us/publications/documentsStream.html>.

2013 Grazing Management for Riparian-Wetland Areas Training - Sponsorship and Mentoring

It is time once again to put out the call for sponsorship of the [Grazing Management for Riparian-Wetland Areas Course](#). This course is designed to meet local resource and management needs and is conducted in an interdisciplinary setting. The 3-day course offers a curriculum designed by members of the Creeks and Communities Network that complements the Interagency Technical Reference 1737-20 titled *Grazing Management Processes and Strategies for Riparian-Wetland Areas*. The intent of this course is to facilitate the application of the principles and practices of riparian compatible livestock grazing by establishing a foundation of understanding upon which people can collectively address opportunities and solve problems. Participants learn to develop riparian resource objectives and design grazing management strategies that are practical and foster sustainable conditions. Collaborative planning, the need for focused monitoring, and adaptive management are emphasized, along with success through operator commitment.

Go to <http://www.blm.gov/or/programs/nrst/grazing.php> for a copy of the sponsorship request form, a sample agenda, and an electronic copy of TR 1737-20. Each grazing course provides a unique set of circumstances as related to local issues and conditions. Please contact Sandy Wyman, NRST, (541)416-6886 or swyman@blm.gov with questions regarding course costs and site requirements. Course locations and dates will be posted at <http://www.blm.gov/or/programs/nrst/index/php> and listed in the next issue of FSA. In addition we plan to continue to provide mentoring to individuals interested in becoming members of the riparian-wetland grazing management training team. Please let Sandy know if you would like to take advantage of this opportunity.

Full Stream Ahead

Is there something you would like to see in a future issue of *Full Stream Ahead*? If so, send an email to cconnoll@blm.gov. The NRST utilizes this newsletter to share highlights, news and hot topics that pertain to the Creeks and Communities Strategy. This newsletter is for the entire network and we encourage you to send in ideas, questions and articles for us to publicize. For the next edition, all submissions must be received by May 6, 2013.



The National Riparian Service Team can be contacted at:

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<http://www.blm.gov/or/programs/nrst/>

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Roads and Riparian Areas – Information Sources

Do you need to share information to help solve a road drainage problem that is contributing to riparian impairment? Check out these information sources:

Title	Author(s)	Date		Website
Effective Maintenance for Ranch, Fire and Utility Access Roads	Keith Guenther	2012	Single copy \$16.50, see website for quantity discounts	http://www.wildlandsolutions.com/roads/
Environmentally Sensitive Maintenance Practices for Dirt and Gravel Roads	Forest Service San Dimas Technology & Development	2012	Download	http://www.fs.fed.us/t-d/php/tdc_search.php?category=Program&srchword=18
Stabilization and Rehabilitation Measures for Low-Volume Forest Roads	Forest Service San Dimas Technology & Development	2011	Download	http://www.fs.fed.us/t-d/php/tdc_search.php?category=Program&srchword=18
Soil and Water Road-Condition Index	Carolyn Napper	2008	Download	http://www.fs.fed.us/t-d/php/tdc_search.php?category=Program&srchword=18
A Good Road Lies Easy on the Land...Water Harvesting from Low-standard Rural Roads	Bill Zeedyk	2006	\$10 + shipping or download	http://quiviracoalition.org/Publications/Publications_for_Purchase/index.html
Riparian Protection and Restoration: Road Design Techniques	James Bassel	2002	Download	http://www.fs.fed.us/t-d/pubs/html/02251202/02251202.htm
Management and Techniques for Riparian Restorations Roads Field Guide Volume I	Roads Riparian Restoration Team (Interagency)	2002	Download or NRST has hard copies by request	http://www.fs.fed.us/rm/pubs/rmrs_gtr102_1.pdf
Management and Techniques for Riparian Restorations Roads Field Guide Volume II	Roads Riparian Restoration Team (Interagency)	2002	Download or NRST has hard copies by request	http://www.fs.fed.us/rm/pubs/rmrs_gtr102_2.pdf
Riparian Roads and Restoration	Roads Riparian Restoration Team (Interagency)		Electronic Training Short Course on web	http://www.fs.fed.us/pnw/pep/PEP_RRR.html
Water-Road Interaction Technology Series Documents	Forest Service San Dimas Technology & Development	2000	Download	http://stream.fs.fed.us/water-road/
Riparian Road Guide – Managing roads to enhance riparian areas	Terrene Institute	1994	Download	http://www.rmrs.nau.edu/awa/riphreatbib/reeder_riproadguide.pdf

Grazing Management for Riparian-Wetland Areas Workshop – Gateway, CO

The NRST received a request for riparian grazing training from the Grazing Management Subcommittee of the Dolores River Restoration Partnership (DRRP). The DRRP is a coalition of organizations working towards a thriving Dolores River system that is ecologically, socially, and economically sustainable in a multiuse context. The partnership includes public land managers, private landowners, resource agencies, non-profits, technical experts, private foundations and other stakeholders. The Gateway, Colorado workshop, held in April at the Gateway Canyons Resort, was sponsored with support from the Tamarisk Coalition and the Walton Family Foundation and the NRST. Trainers were Sandy Wyman, Rangeland Management Specialist, NRST; Floyd Reed, Rangeland Management Specialist, retired USFS; Cory Parsons, Oregon State University Extension; Bryce Bohn, Hydrologist, BLM; and Steve Leonard, Range and Riparian Ecologist, Cowdance Consulting, all members of the Creeks and Communities Riparian Grazing Team.

The workshop was attended by 47 ranchers, individuals from the BLM and environmental groups, and members of the Tamarisk Coalition to specifically address pre-treatment, current, and post-treatment grazing on tamarisk and Russian olive infested riparian areas and how to use grazing to help control invasive weed species in riparian areas. During the 2-day course that included 1 ½ days in the field, participants were split into teams to develop grazing management objectives, alternatives, and monitoring needs on tributaries to the Dolores River. The teams then shared and discussed their recommendations with the entire group.

Tamarisk was introduced to the United States for streambank erosion control and as an ornamental. Much of the discussion on removal of tamarisk revolves around the amount of water that is taken from the soil and lost through evapotranspiration, as well as its ability to dominate the riparian zone. In the past, eradication from a variety of methods was conducted on tamarisk infested areas. Sprouting and new seedlings require control and there has been progress with the use the tamarisk beetle to control large infestations.

For more information, the NRST instructor's presentations are available on the Delores River Restoration Partnership's website at: http://ocs.fortlewis.edu/drrp/grazing/grazing_committee_resource_documents.asp.



Floyd Reed, Cory Parsons, Steve Leonard, and Bryce Bohn, discussing the training course and what they would do if the Dolores River was under their responsibility (or more accurately, seeing who could tell the tallest tale).

Recognize the guy in the head on hand pose? Our very own Jay Thompson, CO Creeks and Communities Team Leader. Jay participated in the training and was part of this interdisciplinary team.



One of the ID Teams working on their issues and recommendations.



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