



Water Ways Newsletter

Spring 2006

CHELAN COUNTY CONSERVATION DISTRICT

301 Yakima Street, Room 307

Wenatchee, WA 98801

(509) 664-0275

What You Need to Know About Streambank Erosion

By Sarah Walker & Richard Malinowski

Why It Happens

Erosion and its opposing force, sedimentation, are continually at work within a river system. Together, they contribute to stream complexity by increasing channel sinuosity and creating such features as gravel beds, pools and riffles. The rate at which erosion and sedimentation occur is dependent on variables such as soil type, slope, water velocity and vegetative cover. Human disturbance and extreme weather events such as floods can throw the rate of erosion and deposition out of balance. Too much of either force can degrade property, pollute water supplies, damage irrigation pumps, and destroy fish habitat.

How It Is Regulated

Chelan County regulates construction activities and vegetation clearing near water bodies in an effort to help minimize the potential for streambank erosion. Most properties along a body of water have required riparian buffer setbacks. A riparian buffer is an area connected with or immediately adjacent to a streambank or other body of water that is managed to reduce the impact of an adjacent land use. The Building Division of the Chelan County Building, Fire Safety & Planning Department works with private landowners to determine appropriate construction setbacks when a building permit application is submitted. If you plan on doing any "site prep" work on your property prior to applying for a building permit, be sure to check with them about required vegetation buffer widths **BEFORE** you begin. You can reach the Chelan County Building, Fire Safety & Planning Department at (509) 667-6225.



(continued on page 2)

Water Storage to Prevent Water Shortage?

By Kurt Hosman & Sarah Rudback

Water scarcity has been a topic of concern in Chelan County for many years, particularly during times of drought. Water storage options have been suggested as a way to help ensure an adequate supply of water year after year in the Entiat and Wenatchee River watersheds.



Members of the Entiat community met in January to discuss the needs, priorities and potential for water storage in their watershed. Attendees included many members of the Entiat Watershed Planning Unit and concerned local citizens, as well as Chelan County Conservation District (CCCD) and Washington Department of Ecology staff.

After a short introduction by the CCCD, the meeting was facilitated by a team from Golder Associates, an environmental engineering and consulting firm. The Golder team presented background materials to the group that explained the various possible methods for water storage. Each method would capture water during the spring and early summer period of snowmelt and resultant high runoff for use during periods of low flow. Storage methods possible in the Entiat and Mad River basins range from traditional above ground reservoirs fed by tributaries, to ground water storage, to more "passive" methods involving the reconnection of the floodplain to the Entiat River to increase natural water storage capacity.

After discussion of the beneficial uses to which stored water might be put, the group went through an exercise to prioritize those uses. The top four beneficial uses were: 1) increasing late season low flows, 2) fire protection, 3) adequate water for late season agriculture, and 4) fish habitat improvement.

(continued on page 2)

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Streambank Erosion

(continued from page 1)

What You Can Do About It

Building regulations are not enough to prevent streambank erosion. Ongoing stewardship on the part of landowners is also required. Four common preventable causes of streambank erosion and recommended remedies include:

Cause: *Removal of streambank vegetation.*

Remedy: Maintain appropriate riparian buffer setbacks and replant damaged areas. Plant a mix of native trees and shrubs when possible and use grasses and legumes to hold the soil until the trees and shrubs become established. Avoid using fertilizers, pesticides or herbicides near the stream.

Cause: *Uncontrolled livestock access to the stream.*

Remedy: Keep livestock out of the stream by developing upland watering areas and installing a fence, hedge row, or bridge. Livestock not only contribute to erosion by trampling the streambank and grazing on riparian vegetation, but contribute to poor water quality for your neighbors downstream.

Cause: *Development activities that reduce infiltration and increase runoff.*

Remedy: Be aware of how your building plans will change, or have changed, the landscape. Try to minimize hard surfaces and maximize the absorption capacity of your land.

Cause: *Improperly designed stream bank structures such as culverts, bridges, rip rap or dikes.*

Remedy: Modify or replace the existing structure with the assistance of your local conservation district or Natural Resources Conservation Service (NRCS) agent. They will help you properly redesign a new structure, obtain necessary permits, and apply for financial assistance. Please do not attempt to fix these situations on your own. Incorrectly designed projects may stop erosion on your property, but cause problems downstream.

The Chelan County Conservation District is a non-regulatory organization that can provide technical guidance to landowners dealing with streambank erosion. We can provide technical and permitting assistance and may also be able to help you obtain funding to restore your property. Please contact us at (509) 664-0275 if you have any questions or concerns about streambank erosion on your property.



Chelan County Conservation District employee Sarah Walker puts one local example of streambank erosion in perspective.

How Snowpack is Measured

By Sarah Rudback

Most of the water that flows through the streams and rivers in the western United States and Alaska originates as snow. A thorough understanding of the snowpack allows scientists to accurately forecast streamflows and effectively manage our water supplies.

The United States Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) has been responsible for directing a cooperative snow survey program since the mid-1930's. The program originally consisted of manual measurements made at predetermined sites, or snow courses. Today, it consists of an extensive automated measurement system referred to as



SNOTEL (for SNOpack TELemetry) supplemented by manual measurements at select snow courses.

Manual measurements are collected once a month January through June by two-person teams who use a strong, light-weight, graduated aluminum tube and weighing scale to measure snow depth and water content of snow cores at designated snow courses. Snow courses are permanent sites determined to be representative of

snowpack conditions at a given elevation in a given area. A particular snowpack may consist of several representative snow courses. In general, the courses are about 1,000 feet long and are situated in areas protected from the wind.

Standard SNOTEL sites measure snow depth, snow water content, precipitation, and air temperature. Enhanced sites have the ability to collect barometric pressure, relative humidity, soil moisture, soil temperature, solar radiation, wind speed and direction, and water quality data. Sites are powered by rechargeable solar cells and are designed to operate unattended and without maintenance for a year.

SNOTEL sites use meteor burst communication technology to collect and communicate near real-time data from remote high-mountain watersheds to master stations in Idaho, Utah and Alaska. The data is then sent to a central computer at NRCS's National Water and Climate Center (NWCC) in Portland, Oregon where it is verified, stored and managed.

Data, as well as various analyses, reports, and related products can be accessed via the internet at www.wcc.nrcs.usda.gov.

NRCS April 2006 Snowpack Update

	% of Last Year	% of Average*
Wenatchee River Basin	386	112
Chelan River Basin	252	106
Statewide	—	122

*Reference period for average conditions is 1971-2000

Losing Ground: One Woman's Quest to Save Her Streambank

By Mike Rickel and Sarah Rudback

Cashmere resident Joni Thomason was literally losing ground. A flood in the late 1980's severely eroded a section of her property along Mission Creek and more and more of the streambank was being washed away with each subsequent flood event. Repeated attempts at finding assistance to deal with the problem were proving fruitless and she was growing frustrated. Not only was her streambank eroding, but she noticed that fish were becoming stranded and dying in an adjoining irrigation canal as well.

Joni tried reframing the problem to include not only streambank erosion, but fish habitat concerns. This approach generated more attention, but was not enough to interest any one person or agency enough to help her find a solution. In a recent discussion Joni recalled her early efforts, "Oh, sure, people would come and look at the problem," she said, "but they would never follow up."

In the summer of 2003 Joni contacted the Chelan County Conservation District (CCCD) to inquire about possible assistance with the erosion problem on her property. Joni was skeptical at first, due to her past experiences, but the CCCD ended up doing more than just looking into it. "The Conservation District worked with us whereas other individuals and agencies never followed through with their promises to look into it," stated Joni. CCCD staff visited the site and discussed potential restoration options with her. From the initial meeting Joni was upfront about the fact that her family did not have much, if any, money to help pay for the project. Understanding this, the CCCD pursued funding to support the project. Through a Washington State Department of Ecology grant and a US Fish and Wildlife Service grant, the CCCD was able to find all the necessary funds for the work.

"The Conservation District was able to make it happen and they went above and beyond my expectations."

-Joni Thomason, local landowner



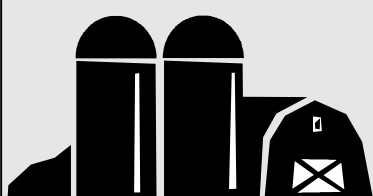
A contractor installs a root wad at the Mission Creek project area. Three root wads and a rock weir were installed to help stabilize the streambank by redirecting the flow of water to the center of the stream channel. The root wads also provide fish habitat by increasing stream channel complexity.

An engineering design was developed and instream work permits were applied for in 2004. The final project plan addressed the erosion issue and improved fish habitat. "Not only did the Conservation District work with us to make the project happen, they kept us informed along each step of the way," Joni said. "The Conservation District was able to make it happen and they went above and beyond my expectations."

The project was completed in October 2005 and is already showing signs of success.

During high flows the water's energy is directed to the middle of the channel and is not eroding either streambank. "It is working as expected," Joni said during a recent visit to the project site. She continued, "I am very pleased with the results of the project and how the Conservation District worked with us to develop an alternative that met our needs and also improved the fish habitat."

How do we ensure an adequate supply of water for...



farms,



fish,



and future growth?

Water Storage

(continued from page 1)

The next steps in the water storage assessment involve using public input to further refine criteria for prioritizing sites, screening the list of potential sites and creating a shorter list for more detailed study later on. If you have any questions regarding water storage projects in the Entiat River watershed please contact Kurt Hosman at the CCCD office (509) 664-0270.

A draft multi-purpose water storage assessment was completed as part of the Wenatchee Watershed Plan. The purpose of the assessment was to identify opportunities for developing water storage projects within the Wenatchee River watershed. Montgomery Water Group, Inc. was hired to complete the two-step assessment. Step A involved the analysis of a broad range of storage-related opportunities in the watershed. It supplied baseline information for the Water Quantity Subcommittee to select top priority options from for further evaluation. Step B provided a more in-depth analysis and ranking of the high priority water storage opportunities identified in Step A. The draft multi-purpose water storage assessment is now available for public review and comment as part of the Draft Wenatchee Watershed Plan. For more information please contact the Chelan County Natural Resources Program at (509) 667-6533.

Water storage projects often come with a sizeable price tag. One potential source of funding for water storage projects in our area is the Columbia River Basin Water Resource Management law. In February, Governor Christine Gregoire signed the landmark bill into law. The bill is the result of a consensus reached between state and federal agencies, tribes, farmers, environmental groups, and communities along the Columbia River. According to a February 16 press release from the Governor's Office, "The bill commits to developing new storage and water conservation projects on the Columbia River, provides a formula for allocating newly stored water, and creates mechanisms for jumpstarting conservation measures and improving current management operations on the Columbia River." Two-thirds of all newly stored water will be available for uses such as farming, industry, and municipal growth, the remaining one-third will go back to the rivers for fish. The state plans to raise \$200 million through bonds over the next ten years to fund the law. Further information about the Columbia River Basin Water Resource Management law can be found via the Governor's website at www.governor.wa.gov/.



Hal Hawley
Board Member

Hal was elected as the CCCD's newest board member in January. He is a retired high school math and science teacher, but he redefines the meaning of retired. He owns and operates his family's pear orchard, substitute teaches with the Entiat Valley school district and is a member of a number of local citizen committees.

Hal's strong background in science and active involvement in the local agricultural community provides the CCCD with a unique and valuable perspective.



Danielle Stephens
Office Assistant

Danielle joined the CCCD staff in December as the new office assistant extraordinaire. Her background in management, marketing and customer relations helps keep our office running smoothly and we can't imagine life without her.

When not working for the CCCD, she can be found teaching volunteer firefighter courses in Douglas County with her dad, keeping tabs on her husband who is deployed in Iraq, or trying to keep up with her two-year-old son, Alex.



Comings & Goings



Gary Mitchell
NRCS Resource Conservationist

Gary recently accepted the Coordinator position with the NRCS Resource Conservation and Development (RC&D) Council in Spokane.

Gary began with NRCS in 1980 as a student intern in the Wenatchee Field Office while living in a camper in the Colockum area. Having been with the agency through a national name change and at least two additional statewide reorganizations, Gary has worked in various locations throughout Central Washington. He returned to the Wenatchee Field office ten years ago this month. Gary has been a trusted advisor to the agricultural community and the Conservation District. He will be greatly missed, but we all wish him the best of luck in his new position.



One last rip down the mountain for snow survey.



Jim Bartelme
Associate Board Member

Jim Bartelme joined the CCCD board of supervisors as an associate board member in January. He has already volunteered to help with several projects for the Conservation District and local community.

Jim grew up in Cashmere and moved back to the valley after a career with the United States Forest Service. He brings a wealth of knowledge regarding natural resource management and policy to the table and we are very happy to have him as an associate member of our board.



Richard Malinowski
Project Manager

Rich joined the CCCD staff in November as the new Project Manager. He holds a Bachelor of Science degree in Fishery Biology with a minor in Chemistry from Colorado State University.

Rich has a diverse background in natural resource management and has worked in both the public and private sectors. He also has experience as an orchardist, business owner, and trusted local real estate professional. Rich is a great source of motivation and a welcome addition to our staff.

CCCD Board of Supervisors

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