LONG TOM WATERSHED COUNCIL

Bimonthly watershed news and meeting notice

JANUARY 2010

Action Through Understanding



January Watershed Council Meeting

Monroe High School Library

Thursday, January 21, 2010 5:30 p.m.

Free and open to everyone—refreshments served!

Fish in Agriculture watercourses, and Grassed Waterways

Meeting hosts: Jason Hunton, Chad Stroda

- **"Good News" on fish results from agricultural watercourses—**

  G. Giannico, OSU Extension

- **How to do a grassed waterway–**

  Kevin Siefert, farmer, Linn SWCD

- **Local project examples—**

  Scott Gibson, Tony Stroda

A cutthroat trout is measured as part of the watershed council's pilot fish tagging and tracking program.

Inside:

The Long Tom Watershed Council serves to improve water quality and watershed condition in the Long Tom River basin through education, coordination, consultation, and cooperation among all interests, using the collective wisdom and voluntary action of our community members.

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www.longtom.org

Meeting Background

Seasonal Watercourses in agricultural lands of the upper Willamette valley

By: Guillermo giannico, Ph.D., Department of Fisheries and Wildlife

Flooded fields in December

Historically the upper Willamette River Valley, western Oregon, was characterized by seasonal floods and large expansions of its stream network. During the past century, human activities have altered or eliminated many intermittent stream and floodplain habitats in the valley. As a result, the remaining intermittent streams and ditches, referred to as watercourses, may still provide habitat critical for native fish. The objectives of this study were to determine: (a) fish presence; (b) spatial gradients of fish distribution (including species identity, native vs. non-native, and numbers); (c) fish use of the intermittent streams as spawning and nursery habitats; and (d) main factors that influence numbers of both fish and fish species. In winter and spring of 2002-2003, we examined the distributions of fish species in five sub-basins within the Willamette River Valley. Sampling sites were in intermittent watercourses that drained grass seed producing fields. We collected water samples and sampled fish December to May with minnow traps and an electrofishing unit, and collected standard fish habitat variables at all sites in spring. Thirteen fish species were found and only three of them were exotic. The presence of recently hatched and juvenile fish shows intermittent watercourses offer conditions suitable for spawning and juvenile rearing.

Sample reach within an agricultural ditch

The two watershed-scale variables with the most influence on fish species richness were % watershed covered by forest and distance to perennial water, which showed a direct and inverse relationship, respectively, to species diversity. In turn, fish abundance showed a negative, albeit modest, relationship with distance to perennial water. Among local-scale variables, water velocity and conductivity were inversely related to species richness and fish numbers. Our results highlight the relevance of intermittent agricultural watercourses for native fish species in the Willamette River Valley, and call for promotion of agricultural conservation practices that benefit farmers while maintaining aquatic biodiversity in floodplain habitats.

Cutthroat trout being measured

This study provided the foundation for a larger effort involving colleagues from various disciplines under a research project titled: Assessing Trade-Offs Between Crop Production and Ecological Services: The Calapooia Basin.

GRASSED WATERWAY PROJECTS

BACKGROUND AND PROJECT DESCRIPTIONS

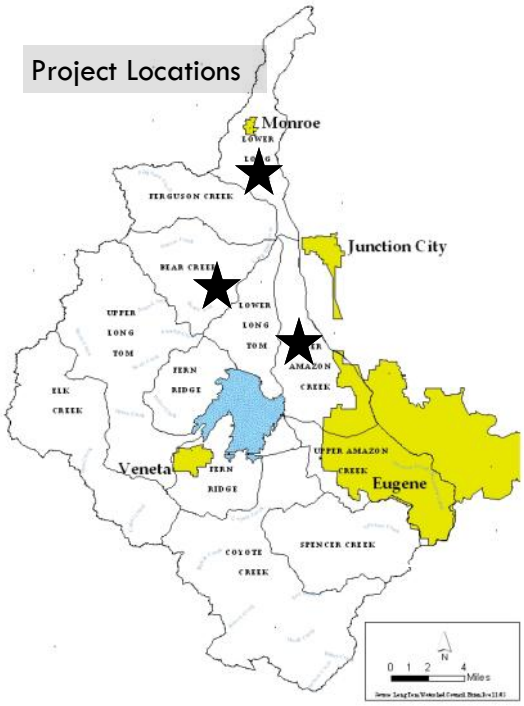
Through the volunteer water quality monitoring program, the Long Tom Watershed Council has documented high levels of nitrogen and phosphorus in surface waters within the lower Long Tom and both lower and upper Amazon sub-watersheds. Based on this information, we have prioritized several project types depending on the landscape type. In agricultural areas, grassed waterway projects will help reduce nutrient and sediment inputs to the streams in these sub-basins. The Council has worked with three local farmers to convert agricultural drainages into grassed waterways. Prior to the projects, two of the d rainages had steep-sided, erosion-prone banks that were difficult to maintain and contributed to water quality problems. The third site had poor drainage and many unvegetated areas. The advantages of grassed waterways at these sites has been the elimination of erosion, better drainage, improved maintenance ability, and reduced water quality impacts from farming activities.

We constructed our first project in 2006 at the Hunton family farm on two seasonal drainages that flow through 600 acres of grass seed fields into lower Amazon Creek. Before the project, reed canarygrass choked the drainage, provided no cover on the channel bottom and was impossible to effectively mow. The primary management tools were herbicide application and periodically scraping the channel out. The Council was awarded a grant from the Oregon Watershed Enhancement Board (OWEB) to pay for construction, grass seed, and shrubs. The landowner contributed matching funds and labor, including pre-construction herbicide application to kill off reed canarygrass, seed drilling, post-construction spot spraying, and shrub planting.

Before: *The seasonal stream had relatively steep banks, making management difficult and increasing erosion . Reed canarygrass choked the stream.*

On the first drainage, we hired Conser Quarry to slope the banks back approximately 3 to 1 with a small bulldozer, seeded the bare ground with native grass, and planted native shrubs every 50' – 100' to provide habitat for birds and other wildlife. We learned that this was not a shallow enough slope for easy mowing and that we should have waited to plant the native shrubs until after the grassed waterway had become well established. We also felt that the clusters of shrubs should have been spread farther apart to facilitate mowing. On the second drainage, we hired Ag Drainage to use their large bulldozer and laser scraper to slope the banks back 7 to 1. Like the first drainage, we seeded the banks and channel bottom with a mixture of native grasses that tolerate a range of soil moisture and periodic submersion. These grasses help to filter runoff from the surrounding fields without forming a thick mat like reed canarygrass and creating drainage problems. The gradually sloped banks have eliminated erosion and make mowing easy.

After: *The more gradually sloped banks allow for easy management and lessened erosion. The native grass species in the drainage will filter out excess nutrients and pesticides.*



In 2008, the Council partnered with Stroda Bros. Farms to install a grassed waterway on a steep, eroding ditch through their Christmas tree farm. The level of erosion was causing significant soil loss and sending sediment and nutrients downstream.

GRASSED WATERWAY PROJECTS (CONTINUED)

Ditch at Stroda Bros. Farm before and after installation of grassed waterway. The after picture is immediately after. At the meeting we'll show additional progress in revegetation.

After each 8-year harvest rotation, the Strodas had to fill in and re-shape the ditch, only to start the cycle over again. The Council was awarded a grant from OWEB to pay for engineering and materials. Stroda Brothers provided all labor.

The Council hired River Design Group out of Corvallis to engineer a channel that would hold up to winter flows on the steep ground. The design included a 4" perforated, flexible pipe buried below the channel, an 8' wide flat bottom, and shallow side slopes extending 10' on either side. At the bottom of the slope a rock pad was installed to diffuse energy before the water exits the site.

The Strodas completed the earth work themselves, seeded the channel with grass, and covered it with a geotextile fabric made of coconut fiber and plastic mesh. With the first fall rains the grass grew up through the fabric and created an erosion-resistant waterway that filters runoff from the adjacent Christmas tree field.

Our third project took place at Lochmead Farms in 2008 on a seasonal drainage that flows into Flat Creek. The ditch lacked vegetation along much of its bottom because it stayed too wet for the adjacent crops (fescue, clover) to grow through it. This situation created erosion along the bottom at higher flows and did not provide any filtration of sediment or nutrients. With a grant from OWEB, we hired Ag Drainage to use a laser scraper to create an even longitudinal grade, a flat bottom, and very shallow side slopes. The farmer drilled creeping red fescue and seaside bentgrass along the drainage as suggested by practitioners from other nearby counties. This project has yielded improved conditions, although so far grass establishment has been moderately successful. The farmer thinks that seed to soil contact should have been better and plans to improve this aspect in his next grassed waterway project.

<u>Installation Costs & Maintenance Requirements</u>

- $5 - $15/linear foot (steeper ground or highly erodible soil requires engineering design, geotextile fabric, etc., which will increase cost)
- Landowner usually contributes approximately 25% matching funds and/or labor
- Mowing one to several times per year prevents grass from going to seed and reduces spread of weed species
- Occasional spot spraying to stop reed canarygrass or other weeds from re-establishing

<u>Summary</u>

- Grassed waterways can adapt to a variety of grades and crop types
- In some cases, they can have crops grown through them, resulting in no loss of crop yield
- Decreased erosion improves downstream water quality and conserves top soil
- Grassed waterways filter out a portion of nutrients and pesticides coming off adjacent fields, protecting downstream water quality for fish and drinking water

Watershed Calendar & Announcements

Council Meetings

Thursday, January 21
Fish in Agricultural Watercourses & How to do a grassed waterways project
Free. 5:30 p.m. Monroe High School Library
Note this is a date change from that previously announced

Tuesday, March 30
Results from the Fish Barrier Study 2008-10—where are fish able to access good habitat, and where are they blocked?
How to replace a culvert that is blocking fish.
Issues in local fisheries.
Free. 6:00 p.m. Veneta. Location TBA.

May and July:
Project tours and how-to do specific types of projects.
Free. 5:30 p.m. Various watershed locations—stay tuned!

Contact: Dana Dedrick, 683-6578

WREN Wetland Wanders and More

WREN Wetland Wander at Steward Pond (Bertelsen Nature Park)

February 9 , 9:00 AM (1 hr)
Wetland Wanders are casual walks through various West Eugene Wetlands sites each 2nd Tuesday of every month. Stewart Pond is a 150-acre natural area located east of the intersection of Bertelsen Road and Stewart Road, north of West 11th Avenue. Free! WREN will provide binoculars. For more information call 683-6494 or email info@wewetlands.org

Plant Trees with us!

Saturdays, 10am—2pm
January 30
February 13
February 20

Tree plantings are coming soon! The Council will be working on several restoration projects during January and February. The projects will include planting lots of native trees and shrubs, and **we'll need our fabulous volunteer crews once again** so please consider helping out.

Please email or call if you would like to ask a few questions or just sign up. (email is the preferred contact method for organizing this so if you use email—please send us one).

Contact Jed at jkaul@longtom.org, 683-6183

Contacts for volunteer opportunities:

Long Tom Watershed Council: 683-6949
WREN: 683-6494
Nearby Nature: 687-9699
City of Eugene, Volunteers in Parks: 682-4845
City of Eugene, Stream Team: 682-4850

Our Watershed & Council

LONG TOM WATERSHED COUNCIL

Action Through Understanding

Steering Committee

Lower Long Tom
Jason Hunton
Jim Pendergrass, *Treasurer*
Chad Stroda

Upper Long Tom
Patti Little
Carl Harrison
Ric Ingham, *Vice-Chair*

Amazon
Peg Boulay
Eric Wold, *Vice-Chair*
Brad Taylor, *Chair*

At Large
Kat Beal, *Secretary*
Kim Carson
Steve Cole
Rich Reeves
Deborah Saunders-Evans, *Vice-Chair*
Tony Stroda, *Past Chair*

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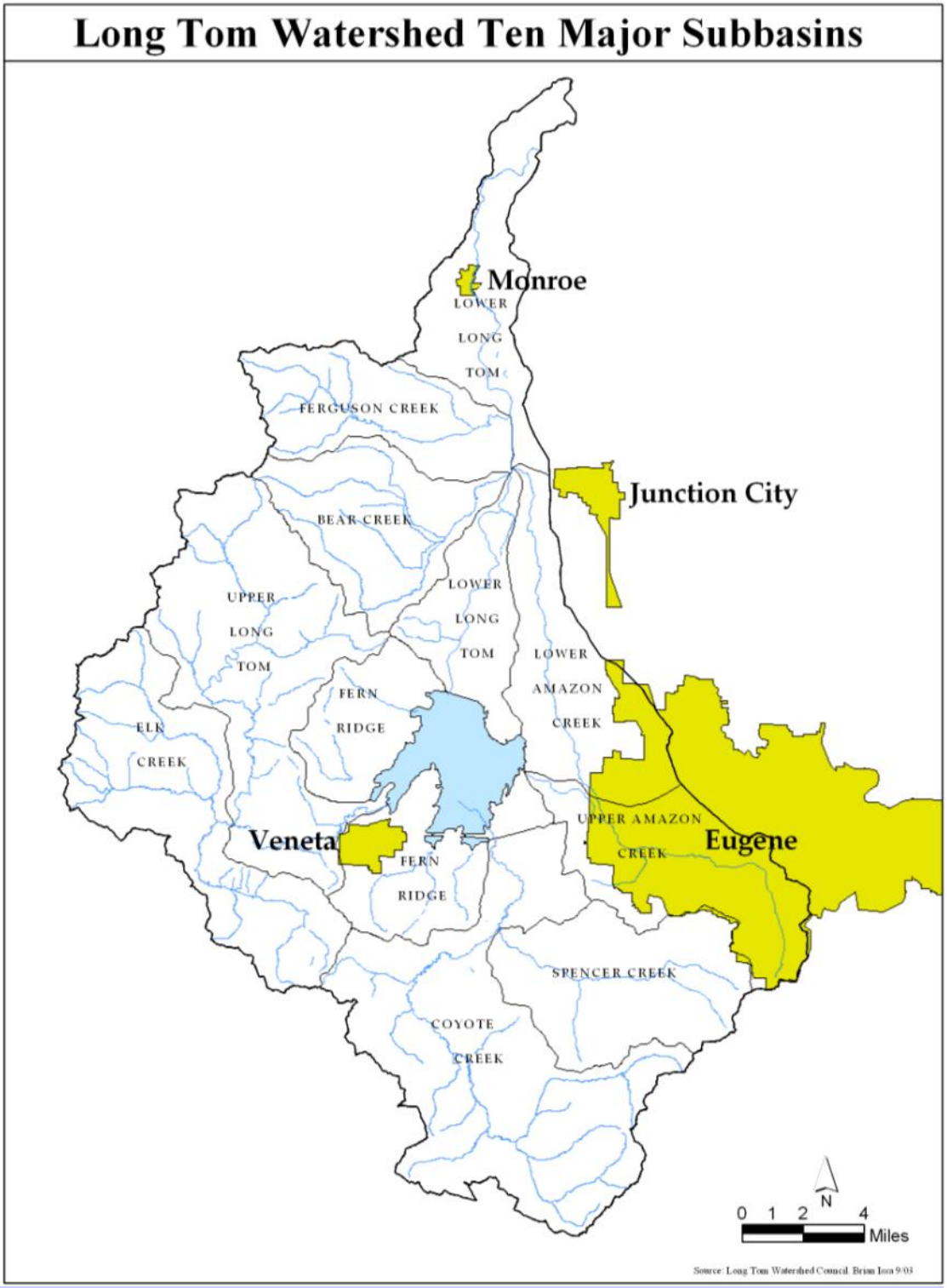

STAFF

Watershed Coordinator / Executive Director	***Projects & Monitoring***	***Fiscal Manager***
Dana Dedrick 683-6578	Cindy Thieman & Jed Kaul 683-2983 683-6183	Amanda Wilson 683-6949

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Eugene, OR 97402

Meeting this coming Thursday: Fish in Agricultural Watercourses, How to do a grassed waterway project.
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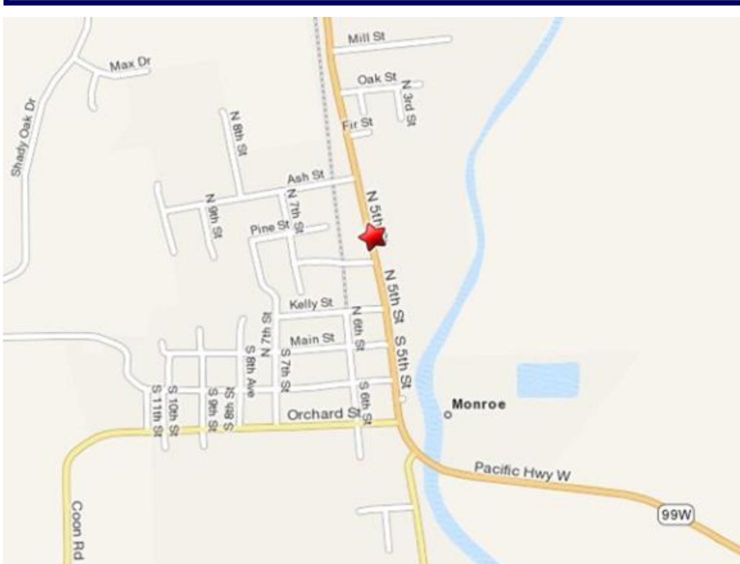

Directions to Monroe High School

Monroe is on Highway 99W between Corvallis and Junction City.

Monroe High is at the north end of town on the main road— 5th street— on the east side of the road..

The **Library** is in the main building, about mid-way down the hallway on the west side of the building.