

A Word from the Watershed: Summertime Low Flows

By Corrie Aiuto

In this installment of the Upper Nehalem Watershed Council's (UNWC) monthly column we look at the importance of low stream flow, why it matters, and how we can help.

I recently sat down with Vernonia City Councilor Dale Webb to discuss stream flows in the Nehalem watershed, a subject which he is particularly suited to discuss given his over 20 years of experience volunteering with various watershed organizations, monitoring aquatic life and water quality, and studying the local waterways.

I meet him at his Vernonia home and he and his wife, Donna, greet me with ready smiles and open faces. We sit in the office, so as not to disturb the

pickling process in the kitchen, and I ask him what he can tell me about low flows. Right off the bat, he explains that we don't know what flows were like before settlers began altering the landscape.

"There's no good record of what stream flows in the Nehalem were historically," Dale says. "I believe the Foss river gauge was installed in 1939, but that's after they had already started logging quite a bit of the old growth." He goes on to explain that old growth forests help retain water in and around the streams by providing dense canopy and shade, and that their absence has probably impacted flows.

We do know, however, that in late summer months before the fall rains, usually August through September, the Nehalem River usually drops to flows

below 100 cubic feet per second (cfs) at the Foss, Oregon monitoring site. Compare that to the 10,000 to 20,000 cfs that is typical in the winter months and you get an idea of the fluctuations that occur in the river. The Nehalem gets even lower as it passes through Vernonia. Before reaching the Rock Creek confluence, flows sometimes reach five cfs as it bottoms out in September with winter highs typically in the 400 to 600 cfs range.

"When we talk about low flows we have to ask, 'What's the concern with that?'" says Dale. We begin to talk about why this subject deserves our attention at all. Which is fair, because to most of us, the river seems to take care of itself. There are natural fluctuations, and in the course of 10 or 20 years the river can see flood and drought and prime conditions whether we pay attention or not. Indeed, most of the factors impacting stream flows are out of our control. Even so, it is important to know how our water systems function, how it affects animal, plant, and human life, and what measures we can take in dry times.

One effect of low flows that we need to understand is the increased stress on fish and aquatic life. As the stream dwindles, water temperatures rise from direct solar radiation and heat indirectly radiating off the now exposed bedrock. This lowers the dissolved oxygen in the water and can be deadly to many fish species, including salmon.

"A big concern is that their habitat shrinks," Dale adds. The loss of prime rearing and shelter habitat is a challenge many juvenile fish cannot overcome. As the river becomes a trickle, small fish are either forced into the main channel where they are vulnerable to predators, or are trapped in small pools without access to food.

There is also the obvious problem that low flows can cause water shortages for human uses. Drinking water, wastewater, cooking, washing, watering crops and livestock, all must be satisfied to maintain a functioning society. That is not to mention our aesthetic and recreational water uses: lawn care, car washes, swimming pools, and water sports.

Having enough water to go around is important, but as I mentioned, there are factors that we have little to no control over. One factor is that much of the water flowing downstream

comes from rainfall throughout the year. Rain is a function of nature over which we exert very little control. The intensity and duration of summer heat is another factor. To put it simply, the weather decides the fate of the streams most of the time.

I ask Dale if there are meaningful ways a person can help.

"The amount of water that flows down the stream is beyond the average person," he says, "but what is not beyond the average person is their usage." Personal and household water consumption is one area where we can do something. Many cities have a water curtailment plan to help reduce water use during low flows and drought, including the City of Vernonia. Water curtailment in Vernonia recently went into effect which restricted water use for pools, cleaning structures and vehicles, and lawn and garden care. Beyond following your local curtailment efforts, consider using efficient methods to water lawns and gardens such as drip lines, installing low flow toilets, shower heads, and faucets, and fixing leaky pipes tightens the belt on water waste.

For those who own land by the streams, work to maintain a riparian area filled with trees for shading and habitat. Leave buffer zones when logging and replant trees as necessary. Contact the UNWC about help with planting trees and maintaining the riparian.

If you own water rights, consider an instream lease. The Oregon instream leasing program allows unused water to stay in the stream to the benefit of aquatic life while keeping the user's water right intact. An instream lease can be seasonal, temporary, or permanent, depending on the needs of the water user.

Finally, a larger scale solution we can work towards is the building of more wetlands in the watershed. Wetlands, whether created by beaver activity or naturally occurring, harness the power of storage and seepage to retain water and cool it down, releasing it more slowly into the streams. This helps the stream flow combat the intense highs of flood and the severe lows of drought and summer.

As I pack up to leave the Webb home, thanking them for their time and hospitality and saying our goodbyes, I am struck with a sense of community. While the average person may not have control over the weather, when individuals come together, bringing their varied skills and interests, we can work towards solutions to the toughest problems. If you want to join the community of the Upper Nehalem Watershed Council in caring for our waterways or learn more, call (503) 429-0869 or visit UNWC.Nehalem.org.

What's Happening at the Vernonia Library

Upcoming Events

LEGO Designer Grant Davis
Saturday, September 21, 4-5 pm
Grant Davis will share his experience designing a pop-up book for LEGO, currently for sale. Presentation includes slides of his LEGO creations. Grant Davis is an Electrical Engineering student at George Fox University and in his spare time, designs and builds custom LEGO models. Presentation is for students and adults.

Ongoing Programs

Craft Corner (for ages 5-8)
Tuesdays, September 17 - October 8, 12-1 pm
Register at the Library or call (503) 429-1818 to participate. Each weekly meeting will have a project with all materials provided.

Summer VHS/VMS Art Club
For 6th - 12th graders, Homeschool and Vernonia School District students. Final summer meetings: Thursday, September 5, 3-5 pm and Saturday, September 7, 12-2 pm.

Writer's Group
Thursday, September 19, 6-7:30 pm

3rd Thursday of every month. For writers with all levels of experience.

Book Discussion Group
Last Monday of every month, 5:30 pm. Discussion for September 30: *The Round House* by Louise Erdrich

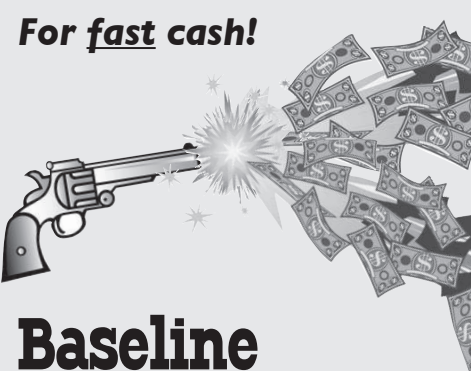
Storytimes & Activities for Young Children

Library Playgroup (New!)
Wednesdays, 10:30-11:30 am starting September 18
Activity stations designed for young children, birth - preschool. Drop-in and play or stay the whole time.

Preschool Storytime
Fridays, 10:30-11:15 am starting September 13
Stories, activities, and a craft for children up through age 6.

Library Hours & Contact
Monday, Wednesday, Friday: 10 - 5
Tuesday, Thursday: 12 - 7
Saturday: 12 - 5
Closed Sundays
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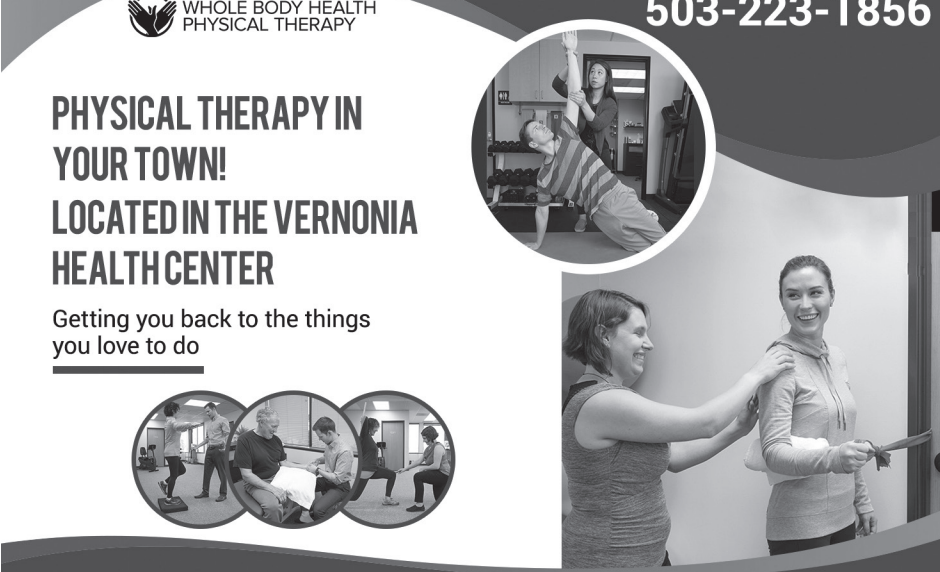
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