

Willamette Basin's stream health in jeopardy, study finds

By Scott Learn

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Brian Wegener, watershed watch coordinator for Tualatin Riverkeepers, shows how runoff damages the stream banks of Fanno Creek where it goes under Main Street in Tigard. Many streams in urban areas of the Willamette River basin have been damaged. The Willamette River basin's miles of arteries and capillaries have just undergone their most thorough check up to date.

Turns out, the patient has some serious health issues:

- Nearly 70 percent of the streams and rivers in the basin are too warm to protect salmon, trout and other sensitive cold-water fish.
- The biological health of more than 80 percent of streams that run through cities and farms is severely compromised, which is bad news for critters from crawdads to insects to clams.
- Almost half the 11,000-plus miles of streams in the basin have a shortage of tree cover and streamside plants, hurting aquatic life by boosting water temperatures, erosion and water pollution.

These figures come from a new Department of Environmental Quality **assessment** that sampled 650 sites throughout the valley, consolidating work done by government biologists, watershed councils and Oregon State University researchers.

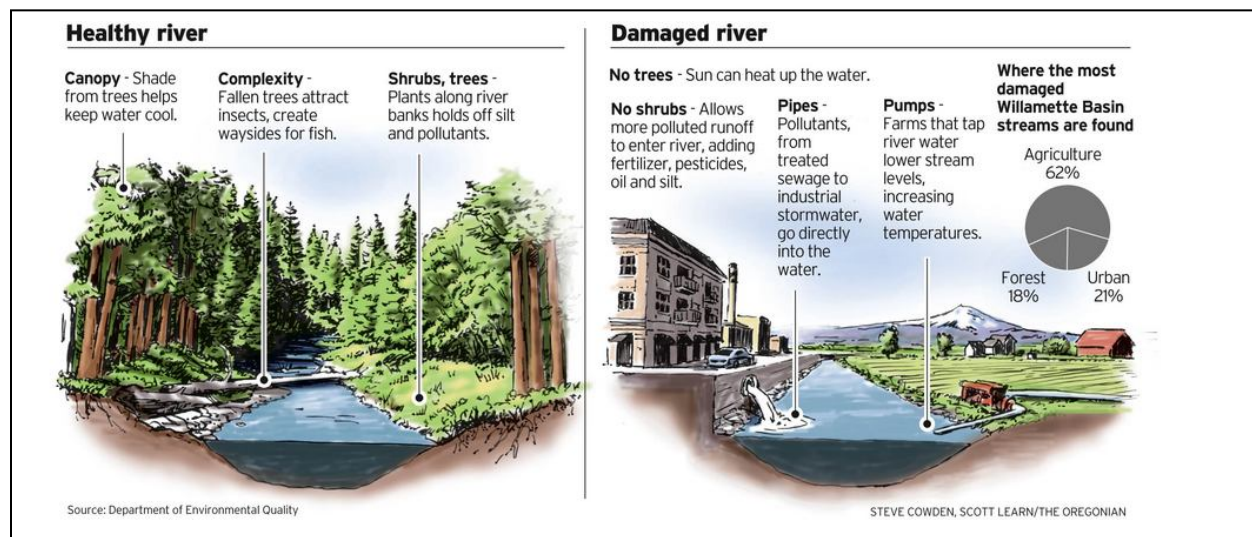
The diagnosis isn't entirely grim. Streams on forestlands, still the main land use in the basin, are in relatively good shape. So are rivers and streams in

relatively unpopulated areas, including basins for the Clackamas and McKenzie rivers and the Willamette's Coast Fork.

But overall, DEQ Director Dick Pedersen said, the assessment shows the job that remains to restore the Willamette and its tributaries, a basin that includes most of Oregon's farms, cities and residents.

"People encroach on streams -- they have for a long time," Pedersen said. "And the streams are feeling that pressure."

The study spotlights the damage to stream life by urban development and farms. City streams account for about a 10th of the stream miles in the valley -- and a fifth of the most biologically damaged streams, the study authors estimate. Agriculture covers roughly a third of the valley's streams - - and nearly two-thirds of the most damaged streams.



Researchers at DEQ's laboratory also found a strong connection between damaged streamside or "riparian" vegetation, higher temperatures and impaired stream life.

A thick tree canopy shades water, with fallen trees adding habitat for insects and fish. Thick vegetation helps stop and filter polluted runoff, whether it's fertilizers from farms and city yards, oil from streets or sediment from logged land, said Aaron Borisenko, the laboratory's watershed assessment manager.

"It's a strong statement that riparian condition is the thing to focus on to get bang for your buck," Borisenko said. "It seems to be a fairly simple way

of getting at some big problems."

Cities are already under pressure to restore streams. The Willamette system is listed as impaired under federal law because of high temperatures. That is prompting sewer agencies to spend more ratepayer money planting trees and native shrubs along streambanks.

Farmers are subject to a state law that encourages buffer zones and bars them from degrading streams or removing streamside vegetation. Money from the federal government and the **Oregon Watershed Enhancement Board** helps with restoration projects, said Ray Jaindl, administrator of the Oregon Department of Agriculture's natural resource division.

Farmers and ranchers "are much more cognizant of what the public expects from them," Jaindl said, "and they're making a lot of changes to address those concerns."

Whether enough is being done is a matter of fierce debate. It has taken lawsuits to force DEQ to crack down on polluted industrial stormwater.

Farmers have a lot of leeway in how they protect streams, and enforcement of the law is lean, said Travis Williams, executive director of **Willamette Riverkeeper**.

The Department of Agriculture has levied one civil penalty since the stream protection law passed in 1993.

"If landowners are worried about more rules, we need more of them to step up and do something on their land," Williams said. "If that doesn't happen, new state laws could come to pass."

The Farm Bureau cautions against exaggerating the negative effects of farming. A separate study by DEQ that looked at toxics in Willamette basin rivers found widespread presence of herbicides, but none violated water quality criteria.

It's unclear if expanding streamside vegetation -- adding costs and taking agricultural land out of production in the meantime -- will knock down temperatures enough to make a difference, said Katie Fast, the Farm Bureau's director of governmental affairs.

"There are a lot of unanswered questions about whether the benefit is worth the financial investment," Fast said.

Two pipes drain storm water from Main Street in Tigard and nearby rooftops into Fanno Creek. Green roofs and replacing concrete with plants, gravel or other more permeable coverings can help reduce runoff. Those issues are playing out daily in the Tualatin River basin, where 800 miles of streams flow from the Coast Range through cities such as Hillsboro, Tigard and West Linn to the Willamette.

DEQ's assessment ranked the Tualatin first among 12 sub-basins for disturbed streambeds, excess sediment and human disturbance of riparian areas, citing "extensive" water quality impairment.

The agency's separate toxics study found the broadest suite of contaminants in the Tualatin, albeit at very low levels, including prescription drugs, herbicides and insecticides.

That's not news to Brian Wegener, watershed watch coordinator for **Tualatin Riverkeepers**. Within a few miles of downtown Tigard, Wegener can point out "the good, the bad and the ugly" on streams.

That ugly side includes Fanno Creek as it runs beneath a Main Street bridge. Stores and parking lots hug the riverline. Three pipes dump stormwater from roads and rooftops directly into the creek, which gushes through a manmade bottleneck that tears away the thinly covered banks during storms.

The stream banks on this stretch of Fanno Creek in Tigard's Greenway Park have been replanted to increase shade and better protect the stream from polluted runoff. Nearby Summerlake Park features a dam and man-made lake on Summer Creek, created as an amenity for a residential subdivision.

Wegener's group put temperature sensors upstream and downstream of the lake. On a hot summer day, Wegener said, the temperature rose 11 degrees in a few hundred yards.

The Tualatin basin is naturally high in silt, flat and slow-moving. And it's heavily developed.

But the basin has an upside, too, Wegener said. Much of the agricultural land is in container nurseries, more heavily regulated than field crops.

Unlike Portland, few of its streams have been buried by development. Clean Water Services, the area's sewer agency, has significantly cleaned up effluent from its sewage treatment plants.

The agency is experimenting with routing cool water from Hagg Lake to rural tributaries.

And restoration projects are accelerating, from both volunteers and the government. In the last five years, **Clean Water Services** says it has replanted 30 miles of streambank, tripling federal subsidies to encourage farmers to participate.

In Englewood Park, Wegener points out a thick mass of willows, cottonwoods, cedars, big leaf maples and snowberries guarding Hiteon Creek, the product of a persistent city of Tigard replanting project.

Wegener, a former math and science teacher at Lincoln High School in Portland, has worked on river restoration for 15 years. He sees stream restoration taking hold and a rising environmental bar for new development.

"It took us a lot of years to make this mess, and it will take us a while to fix it," he said. "That's no reason to give up."