We All Live Downstream

Transcript of VTP 21 (1996)
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Introduction

Narrator

America's fresh water supplies are in critical condition. The Environmental Protection Agency reports 40 percent of our nation's fresh water is too polluted for swimming, fishing, and drinking. Even in the backcountry, it is no longer wise to drink untreated surface water.

Judi Li, Oregon State University

Watersheds are really made up not just of the streams, but the lands that surround them. So if we see tremendous degradation in our water systems, then it's an indication of what's going on on the surfaces next to them.

Narrator

Pollution from industry and sewage treatment plants is no longer the greatest threat to our fresh water supplies. The greatest threat is a result of our growing, sprawling population. Scientists call it "nonpoint source pollution,"but most of us know it as runoff.

Roger Wood, Oregon Department of Environmental Quality

Nonpoint source pollution results from all human activities in all watersheds. It's not something you can blame on somebody else. You can't point to somebody else's activity and say that they're the ones who are causing this. It's each of us.

Narrator

We are slowly poisoning our waters and few of us even know it.

Stan Gregory, Oregon State University

Each and every one of us live directly on a stream—when we turn on the tap, when we flush our toilets, when the runoff comes out of our storm drains—we are connected very directly and very immediately with that river and everything we do has an impact on it.

Narrator

It is a problem that could haunt our children, their children, and all the generations that follow. Americans must now face the fact that we all live downstream.

The Tualatin Watershed

Narrator

Fresh water has sustained life on Earth for millions of years. Time and time again it has cycled through our atmosphere—falling from the skies as rain, sleet, or snow, nourishing the Earth, and returning to the skies through evaporation. Fresh water is the lifeblood of human existence, flowing from highlands to lowlands, and generation to generation.

The Tualatin River is one of our nation's most-studied fresh water sources. It springs to life in Oregon's Coast Range, dancing over waterfalls and gathering momentum, as it rushes through the heart of lush Northwest forests. The river slows to a crawl as it reaches the flatlands, carving a path through the fertile Tualatin Valley. Near the end of its 83-mile journey, the Tualatin tours several Portland suburbs, then empties into the larger Willamette River.

Like many of America's fresh water sources, the Tualatin is feeling pressure from growing populations and development. Water quality specialist Ron Miner says the Tualatin provides a perfect example of what is happening to fresh water sources across our country.

Ron Miner, Oregon State University

It makes a unique laboratory to talk about how can American civilization cope with itself and preserve the quality of the environment around it.

Narrator

One of Miner's specialties is the history of the Tualatin basin. He understands how urban and rural development have taken a toll on this river.

Ron Miner, Oregon State University

As we have developed this basin to make it more amenable to human endeavors, we have made dramatic changes in the way the water is going through the streams. We have, first of all, changed the flow rate and the hydrology, we've changed the amount of natural treatment that goes on within the system, and then we've added new waste loads to the whole system in addition to that.

Understanding the Past

Narrator

Development in the Tualatin basin began more than 150 years ago. Early settlers logged timber from the hillsides to build homes, businesses, and towns. They drained wetlands and removed native vegetation, as they prepared the land for agriculture. Over the years, Oregonians dammed and diverted the Tualatin and its tributaries and dumped all kinds of pollutants into the river.

These practices continued into the early 1940s, when Oregon's State Sanitary Authority discovered the Tualatin's oxygen content was too low for fish and other aquatic life to survive. The report blamed pollution from sewage treatment plants and canneries.

Cities and industry worked to clean up their discharges and water quality stabilized for a while. But in 1969, the Department of Environmental Quality concluded that pollution from more than two dozen small, inefficient sewage treatment plants was choking the life out of the Tualatin river system.

One year later, voters created the Unified Sewerage Agency to address the problem. John Jackson recalls the situation. He is the agency's planning director.

John Jackson, Unified Sewerage Agency

We had aquatic life that was threatened. We had a tremendous public health problem because of the hundreds of thousands of fecal coliform and total coliform bacteria that we had in these tributaries and the main river.

Narrator

The Unified Sewerage Agency assumed responsibility for what we now call point-source pollution. That means the source can be traced to a specific point. It phased out the most inefficient sewage treatment plants, improved others, and built new facilities—like this one. But that wasn't the end of the problem.

The 1980s brought continued population growth—and greater stress on the Tualatin.

Assessing the Present

Narrator

In 1986, a coalition of Oregon environmental groups sued the Environmental Protection Agency for failing to enforce the Clean Water Act in the Tualatin basin. This led to a new emphasis in pollution control—one that addresses runoff from all parts of the landscape including farms, forests, cities, construction sites, mines, and septic systems. The sources of this pollution are widespread, thus the name nonpoint source pollution.

Roger Wood coordinates the nonpoint source pollution program for Oregon's Department of Environmental Quality. He says our nation must continue its efforts to control point source pollution, but stresses the growing need to reduce nonpoint source pollution.

Roger Wood, Oregon Department of Environmental Quality

Every time a study is done, in Oregon or nationally, we find that nonpoint source pollutants are from 50 to 80 percent of the total pollution in the water. I think it's time for us to turn our attention nationally and at the local level to non-point source (pollution). Otherwise, we'll never be able to bring river and lake and groundwater quality to the point that we want it to be.

Narrator

Nationwide, regulation of nonpoint source pollution is almost non-existent. Many communities are just beginning to document their local situations.

John Jackson, Unified Sewerage Agency

Nonpoint source pollution needs to be defined locally and it needs to be defined based on the problem it's creating in the river. Some places its dirt—just absolute muddy water—thick enough that you might be able to walk on it as they say. Other places it's dissolved oxygen. It could be an urban stream in a very large city that has to deal with copper or zinc or cadmium coming off of automobiles.

Narrator

Nearly two dozen Oregon scientists helped define the Tualatin's nonpoint source pollution problems with a series of reports issued in 1993. They analyzed the river's major pollutants, identified the sources, when possible, and made recommendations to help reduce nonpoint source pollution.

Stan Gregory provided expertise on river systems and land use planning.

Stan Gregory, Oregon State University

The increase in human populations is a very common problem in all of these watersheds. For instance, in the Tualatin, the population that has developed here over the last 140 years will be doubled in the next 30 years. So we've got to plan and make decisions much faster—and with much shorter lead-time—than we ever have before.

Narrator

Benno Warkentin analyzed the effects of agriculture, forestry, and new construction, as they relate to Tualatin basin soils.

Benno Warkentin, Oregon State University

One of the big things that you can do is protect the riparian, or the area right next to the stream. If you protect the first five to ten feet from the stream, you pick up a lot of sediments, you pick up a lot of nutrients, a lot of chemicals in that way. The other thing is leaving the surface. You'll notice these areas have all been planted and so there will be protection for the surface here during the winter.

Narrator

Judi Li examined life in the Tualatin's aquatic ecosystem and its ties to life on land.

Judi Li, Oregon State University

We've lost a lot of habitat. And so we realize that the stream does not have a chance to filter things the way it did when it was flowing in its complete natural flood plain. And we anticipate that if there were more wetlands here, as there were formerly, we wouldn't be getting as much algal growth or nutrient kinds of cycling within the system.

Narrator

And Wayne Huber was one of several scientists who studied the effects of urban runoff.

Wayne Huber, Oregon State University

One of the biggest contributors in urban areas is the runoff from paved areas, such as hydrocarbons from oil and the products of combustion, zinc from brake linings, cadmium from tires. Mercury and lead are also pollutants that are associated with urban runoff. We fertilize our lawns. We dispose of our trash in a variety of ways. Sometimes we throw things—throw chemicals in the street gutter, not understanding that, in fact, waters that drain into gutters and down storm drains eventually drain into our natural receiving waters.

Narrator

A growing number of communities are working to identify their nonpoint source pollution problems, but government agencies and citizens groups are finding the next step more difficult. The next step is public education.

Forest Practices

Narrator

Oregon's Forest Practices Act imposes some of the nation's toughest rules on logging. One objective is to reduce soil erosion, a major nonpoint source pollutant. That's where Dave Degenhardt comes in. He works for Oregon's Department of Forestry. It's his responsibility to help loggers follow and understand the rules.

Dave Degenhardt, Oregon Department of Forestry

We feel like we've got the enforceable rules on the books to require proper practice, but the real key to doing that is to explain to the landowners and operators the purpose of those regulations. When they know that—almost all the time—they will comply because they understand the purpose of it and they agree with that purpose and they support it.

Narrator

This is not to say that Degenhardt's educational efforts are always welcome. The rules require logging practices that can sometimes double the cost of harvesting. Some long-time loggers, like Don Oakes, say they are skeptical of rules based on today's "best scientific knowledge."

Don Oakes, Hull-Oakes Lumber Company

We've done a lot of things over the years to disturb. We cleaned creeks and just ruined a lot of rivers. We ran skidders out on the ground when it was wet—when they said we could do it—instead of using the Cats and we got a lot of compacted soil from it. And so every time I hear, "the best scientific knowledge," I have reservations about "is it really?"

Narrator

Still, Oakes admits the rules are probably good for the forest industry.

Don Oakes, Hull-Oakes Lumber Company

It's a good program. They get a little carried away on some things—like knocking a few limbs off of the trees along the buffer strips. And you can see the beavers are down there chopping them down— complete trees down. But really, it's not affecting us too bad.

Narrator

Degenhardt says Oregon has made great progress, and is ahead of most states, in controlling erosion from harvest units and potential slide areas.

Dave Degenhardt, Oregon Department of Forestry

What we're trying to do now is raise the consciousness of the operators that are working on the ground to the effects of roads, primarily on sedimentation. That's why we put in a really thick layer of gravel on the road surface to prevent the creation of sediment that could be washed off into the ditches and then into the streams.

Narrator

Abandoned logging roads are another priority. They often require man-made water diversions that channel sediment onto the landscape, instead of into our streams.

Agricultural Practices

Narrator

Some studies show agriculture generates more than half of America's nonpoint source pollution. It is a broad-based industry that covers vast stretches of landscape. Mike Wolf handles nonpoint source pollution issues for Oregon's Department of Agriculture.

Mike Wolf, Oregon Department of Agriculture

Everybody plays a part. All land uses and all landowners and operators have a role to play in its prevention and control because it's essentially rainfall-generated and that affects all of us.

Narrator

The runoff comes from many sources including erosion, animal waste, and chemical applications. It is finding a more direct path into our nation's ground and surface waters with the elimination of natural filters such as wetlands and streamside vegetation.

As is the case in many states, Oregon has few regulations governing agricultural nonpoint source pollution. It regulates confined animal operations, but depends on voluntary efforts in all other areas.

Mike Wolf, Oregon Department of Agriculture

I don't think government is interested in doing this all by itself or can do it all by itself. But there's an important foundation underlying this whole issue and that is public awareness of the situation and solutions—and then the partnerships that need to be built on the local level to address local water quality problems, watershed issues.

Narrator

The state is working with private landowners to encourage better land use practices. On this farm, fences keep livestock away from Dairy Creek, a stream that eventually flows into the Tualatin.

These cattle used to trample the streambank and leave animal waste in the water just about every time they needed a drink. Now, they quench their thirst away from the stream with a gadget known as a nose pump.

Farmer Mike Hauth thinks it's a great idea.

Mike Hauth, Farmer

I think it's bound to help. I can see our banks already that are growing back and I see a great difference right there. It's a great improvement. If more people would do it—if it was possible for them to do it—why I think it would be really a great start.

Narrator

Glenna Wilder runs a commercial horse operation, which is also on Dairy Creek. She consulted with several state agencies and invested her own money to improve her horses' health and the surrounding environment.

Glenna Wilder, Farm Manager & Horse Breeder

One of the primary things that people with livestock need to do is get their manure piles out of the rain. I think that's one of the biggest. And that can be done with something as simple as tarps and moving it to higher ground.

Narrator

Wilder has taken dramatic steps to help keep polluted runoff out of Dairy Creek. When winter rains arrive, she removes her horses from their pastures and keeps them in fenced enclosures. Wilder keeps these areas clean and composts manure in a covered shed. She built vegetated filter strips downhill from the horse enclosure and planted more than 100 Sitka Spruce to enhance streamside vegetation.

Glenna Wilder, Farm Manager & Horse Breeder

We opted for some solutions that were a little more expensive because we feel they're more permanent. And since we are a commercial operation, we've got a lot more wear and tear than say, a hobby farm. But there's a lot of leeway for people. They don't have to pick real expensive options to implement solutions that will help.

Narrator

The Kenagy family has grown crops in these fields for more than 50 years. But times are changing—and so are Peter Kenagy's farming practices.

Peter Kenagy, Farmer

People are in farming to make money, but I think there's a lot more to it than that. I think we need to look beyond just making lots of money and realize that we have got to take care of this ground. It's all we've got. Our environment is what we depend on. If we screw it up, it's screwed up.

Narrator

Kenagy says farmers need to pay more attention to their tillage, their cropping systems, and the chemicals they apply to the land. As he sees it, responsible stewardship of America's farmlands is the only way to avoid future regulations.

Kenagy's practices are drawing praise from Oregon's Department of Agriculture.

Peter Kenagy, Farmer

Any ground which is not easy for me to farm, that's kind of a headache—small pieces where it's tough to turn equipment and irrigate—I've planted to trees and wildlife food. And a lot of that slew that you can see down that way, I've got filbert trees planted along the edge of that (stream) for a border. I've done a lot of things like that.

Urban Practices

Cindy Crook, Unified Sewerage Agency

Only three percent of the water on our planet is fresh water. But there's a reason why we can't get to a lot of that fresh water. Can anyone guess? Do you know why? Right—two percent is frozen.

Narrator

Cindy Crook coordinates the Unified Sewerage Agency's Tualatin River Rangers program. She speaks to fourth graders who live primarily in urban settings.

Cindy Crook, Unified Sewerage Agency

Pollution is not good for our creeks and streams. And a lot of times people don't realize that things they're doing in their neighborhood every day can pollute our creeks and streams. On the back of your little booklet, there's a list of things in your house that you don't want to dump down a drain—either an outside storm drain or an inside drain. You should not dump things like used motor oil, paint; there's a whole list of things.

Narrator

Crook encourages students to take their list home, go though the house with an adult, and search for things that could pollute local water supplies. The homework assignment helps share the information with parents and gives kids an opportunity to earn their Tualatin River Rangers badge. The agency has also developed educational materials that can be localized to any watershed in the country.

Rob Baur, Tualatin Riverkeepers

One of the problems is there's a very narrow riparian area—and the riparian area is the area right along the river. Here, for example, the golf course—it's been cut clear down to the river bank—so there's no trees to shade the river, to keep the sun off of it, keep it cool.

Narrator

Rob Baur is a member of the Tualatin Riverkeepers. This local citizens group organizes canoe trips and other activities that help local residents appreciate the Tualatin

Rob Baur, Tualatin Riverkeepers

If they know something about the river—if they've been out there—they'll have an interest in the river and feel part of it, rather than just seeing it in a brief glimpse as they go over it on a bridge. They'll have a sense of ownership and be more concerned when they read something's going on or see something happening along the bank.

Narrator

Other community groups have taken similar approaches, sponsoring cleanup parties for their urban streams, or stenciling reminders next to neighborhood storm sewers.

Unfortunately, even in the Tualatin basin—where nonpoint source pollution is well documented—public education efforts have had limited success. The Unified Sewerage Agency spent more than five years trying to raise public awareness of the issue, only to learn through a survey that many people thought the term "nonpoint source pollution" meant there wasn't a pollution problem.

John Jackson, Unified Sewerage Agency

A lot of people didn't realize the Tualatin River was there. A lot of people had no opinion as to whether they should be worried about the Tualatin River. A lot of people didn't realize that if they're living up on top of a hill somewhere, that their runoff eventually made it to the Tualatin River.

Narrator

Jackson says the survey renewed his agency's charge to remind citizens of their impacts on local streams. But he admits the results were disappointing.

Shaping the Future

Narrator

The Tualatin River is one-of-a-kind, but it portrays the future for many of our nation's fresh water supplies. America's growing population is creating an insatiable thirst for clean, fresh water. Yet knowingly and unknowingly, we are poisoning this limited resource with the pollution of a growing society.

Natural resource experts say the Tualatin—and fresh water supplies across our nation—are sending an indisputable message about the way we live our lives. It is a message that experts say we can no longer ignore.

Judi Li, Oregon State University

There are long-term consequences of things we do for the immediate gain of individuals or communities. Some of these systems have a very hard time recovering and there are limits to the ability of any biological system to return.

Roger Wood, Oregon Department of Environmental Quality

If our use of the landscape, our use of watersheds in order to make them productive, in order to enhance our standard of living, our quality of life—if that is the benefit we're getting from our land management practice, then part of the price we have to pay for that is to be attentive to controlling pollution from nonpoint sources.

Stan Gregory, Oregon State University

The question is, "How do these ecosystems function and how are they configured when they are most healthy and can we use that to help design the future landscape?" And so it's not to say we're returning to an old landscape, but we're designing a healthier and more functional future landscape.

Ron Miner, Oregon State University

I think it's going to require us to change the way we design urban and suburban developments. Maybe we don't need 50-foot wide paved streets in all of our housing areas. Maybe we can, in fact, promote mass transit and other forms of urban life that require less impervious soils. Maybe we can incorporate wetlands as part of the urban drainage schemes.

Benno Warkentin, Oregon State University

The education has to be there, we have to make sure we have economic solutions to these things, we have

to make sure that our laws don't interfere, for example, with buffer strips along streams. All of those things have to come together and it is a fairly slow process.

John Jackson, Unified Sewerage Agency

We're finding that a lot of citizens and these stream groups are really becoming very possessive of their streams. And we are definitely encouraging that because the outcome is going to be a very positive protection, restoration, or enhancement of that stream or wetlands or lake or pond—whatever it might be.

Judi Li, Oregon State University

We may expect that our city governments and planners will ultimately take the reigns and implement policy. But that won't happen unless there are people who understand why that has to happen and encourage their political system to do something about it.

Roger Wood, Oregon Department of Environmental Quality

It's important that people learn how to sit down together and talk over the issue—define their roles, define what their partnership can be, and forget about pointing fingers at the other group and blaming them for something that they did do or something that didn't do and should have. We all have responsibility for this.