

LU-24-027 IN-PERSON TESTIMONY SUBMITTAL COVER SHEET

Received From: Joel Geier

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Email: joel.geier@peak.org

Phone: 541 745-5821

Address: 38566 Hwy 99W

City, State, Zip: Corvallis OR 97330

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IDENTIFIER: T0690

Thank you, commissioners, for continuing for this second night to listen to your constituents.
My name is Joel Geier, resident at 38566 Hwy 99W, Corvallis.

Before I start on my own testimony, I'd like to read the following statement by Dr. John Selker, by his permission.

Dr. Selker is a University Distinguished Professor, and Associate Director of the Water Resources Engineering Graduate program at OSU. He's outgoing President of the Hydrology Section of the American Geophysical Union, and an AGU Fellow. Here's his statement:

"The landfill at coffin butte has long employed a dangerous and harmful means of disposing of its liquid leachate waste by contracting with a service -- The Corvallis Wastewater Treatment Plant -- that cannot prevent many of the most toxic components from entering the Willamette River. The treatment plant is designed to digest human-generated waste, not the heavy metals, chlorinated compounds, PFAS etc. found in the Coffin Butte leachate. This implicates the city as well, in that their participation directly leads to contamination of the Willamette river, but for the purposes of this hearing, the point is that the operators of Coffin Butte have not sought or implemented environmentally responsible measures to avoid contamination of our environment. To extend a permit for further contamination would be complicit in this tragedy.

Now turning to my own personal testimony:

I have degrees in mining engineering and geology. I work internationally as a recognized expert in how water and contaminants move through fractured rock, with 38 years professional experience. I have peer-reviewed publications both in that field and my side gig, bird conservation research.

About birds: The staff report fails to show the current active location of the Great Blue Heron rookery. I provided extensive documentation for the Planning Commission. The herons are nesting just across the road in Oregon ash trees, which was confirmed on record by ODFW's biologist. Those ash trees could die within years, due to the invasive emerald ash borer. I've placed an article about this threat in the record.

Long before I got those degrees, I lived on a dairy farm where one of my daily chores was to feed our calves. I know what it's like to watch a calf die. In the Planning Commission hearing, our young neighbor McKenna Bradley spoke bravely about the risks to her cattle from air-born plastic. She can't be here tonight but please listen to her video testimony. She spoke of the risk of even one plastic bag. Another neighbor, Angela Krueger, sent in a video, where she snatched a bag from her cow just in time. Those videos are in the record.

Speaking of dead cows, on our farm we called the rendering truck. Dead cows shouldn't be going to a landfill. And landfills shouldn't be killing cows. That's just wrong.

The applicant has shown no ability to prevent that by keeping trash on their site. It will only get worse if they build a new landfill closer to the Bradleys' pastures. The proposed conditions of approval on this issue don't work now and they won't work with the expansion. All it takes is a warm day with thermals for plastic bags to float in over the tree tops. I've seen it happen with my own eyes.

The company's proposed remedy, to send strangers into these pastures to look for trash, is itself an imposition on our neighbors' right to privacy. And if these crews are anything like the roadside trash crews, they're going to miss a lot.

But mainly I'm here to talk about groundwater. In my written testimony I've addressed technical aspects regarding impacts on water levels in wells and natural springs on Tampico Ridge. This is a real risk not addressed adequately, either by the applicant or by staff's proposed conditions.

There's also the arsenic question. Wells just EAST ~~side~~ of the existing landfill -- the direction that groundwater flows out from under that side of the landfill -- show arsenic levels that are highly unusual for this part of the valley. This has been going on for thirty years.

Republic's consultants have tied themselves up in knots, trying to explain away this issue. First they admitted it was seepage from the landfill, but then said they fixed it. Some years later they told SWAC

that arsenic doesn't usually come from landfills. Then they blamed it on sediments from an "ancient bog." And so on, for 30 years.

Now they have a new idea, that low oxygen under the landfill causes arsenic to leach out of the basalt. They send rock samples to a lab. Never mind that about half of their samples were so low in arsenic that the laboratory couldn't detect any. And The rest were barely above that level. Plus, you'd need to suspend all evidence of time scales for rock alteration processes, for their latest idea to work.

Why not just work with DEQ to add monitoring wells on state land to the east, and figure out what's happening? And make them deep enough to answer DSAC expert Dave Livesay's concern that their current wells are not deep enough. Landfill leachate is dense compared to fresh water, so a plume from a leak will want to move downward.

There are households and agricultural wells east of the landfill, plus a very popular fishing pond. Why are they offering to test wells uphill to the south, but not out in the flats? That's a red herring: "Look over here, not over there!"

Turning back to those adjacent properties on Tampico Ridge: The applicant tells you to ignore all of the construction impacts, such as blasting and noise. Never mind that the construction period will extend over three years, half of the claimed six-year operating life.

And impacts on wells and springs will effectively be permanent. This is because the proposed new landfill is badly located, and will need to be kept drained at its base

Unlike better-sited landfills in flat terrain, this one is on a hillside where groundwater can be right up to the surface during the wet season. If you don't keep the base of the landfill drained, water will build up in the hillside, and the landfill will end up as a dam. Not an earth-fill dam, but a trash-fill dam. That's would cause a whole new set of problems.

So they'll need to keep it drained. Not just during construction, but also during operation. And even after that, decades into the future.

So yes, this is a long-term impact. And the applicant has not done any serious investigation of groundwater conditions in basalt bedrock under Tampico Ridge. Their "model" that they hinted at in earlier statements turns out to contradict their own prior interpretations of where water flows. It is neither fit for purpose nor conservative. Again, please see my written testimony for details.

Members of the Planning Commission were quick to recognize the problem, especially Commissioner Lee who put her finger squarely on this issue. Now -- late in the process -- staff has asked a groundwater consultant to try to plug this gaping hole in the application, by drafting a brand-new set of conditions.

Those new conditions call for Republic to start to investigate groundwater conditions below Tampico Ridge, south of the landfill's footprint, but with no guidance on how far south.

Gathering data seems like a good idea. There's really no reason why the applicant couldn't have started on this years ago, to gain a better understanding of this new landfill site.

But their pattern seems to be, just to do the bare minimum. Past behavior is the best predictor of future behavior. You can expect that, if you approve this plan, the applicant will again just do the bare minimum, if even that much.

If they do follow this prescription, will it work? **No**, because there's no supporting basis for staff's recommendations. There is no analysis for why four boreholes is the right number. Why not five, or six, or ten?

Nor is there any guidance on where these boreholes should be placed. Normally in fractured rock you'd expect to start with structural mapping, followed by some geophysics, before you even drill the first borehole. Each borehole should be placed to answer specific questions. But these conditions in effect just say, "Drill four boreholes wherever you like, and report on what you find."

Staff now also suggest that the applicant should run tests to check for groundwater connections with neighboring wells. How would they do that? In my work, the usual method is an "interference test." Notice the root word "interfere"

They'd also need access to those wells. Just like with the windblown litter issue, this condition of approval requires invasive access to neighboring properties. What other permit can you recall, where the applicant was told to interfere with neighbors' wells in order to demonstrate no significant impacts?

There's no remediation plan, in the event that this project lowers well levels by 10, 20, 40 or perhaps even 100 feet. No remediation plan for when the Kipper family's springs go dry, or if in summer water atop the ridge drops too far below the root zone of their trees.

What are residents supposed to do? Hire a driller to deepen their wells? Everyone who lives in the Coast Range knows that when you go deeper, the water gets saltier. Salty water, like landfill leachate, is denser than freshwater. And a salty well is a useless well.

Both the application and the proposed conditions of approval are insufficient to prevent significant impacts, on existing adjacent uses and also sensitive wildlife.

Please uphold the unanimous decision of your planning commission.

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Thank you for your time and I'll be happy to answer any questions.

FORESTS

Watching the Oregon ash vanish

The emerald ash borer is killing the native tree. How do we make the most of the time while it's still here?

Jaclyn Moyer October 17, 2025

Kate Samworth/High Country News



ne June afternoon in 2022, Dominic Maze was sitting on his tailgate at an elementary school parking lot in Fo

O With a sinking feeling, he fished a hatchet from his pickup and started scraping at a bark split on one of the trunks. Underneath, snaking tunnels carved a labyrinth into the tree's inner tissue. Maze's two kids, released from camp and eager to see what their dad was doing with a hatchet in the school parking lot, ran toward him. He told them to watch for a shiny green beetle. Just then, an insect landed on his son's hand. The family stared at the creature: slender body hardly larger than a grain of rice; two bulbous eyes; iridescent shell shimmering emerald-green in the afternoon sun. The beetle flew off, vanishing into the distance, and Maze turned back to the tree. There, he found another, this one dead and wedged in a hole in the bark. "I don't want to be hyperbolic about it, but I felt terrible," he told me. "I mean, just the worst feeling."

This story was produced in collaboration with Signal Hill, a new audio magazine, and supported by Oregon State University's Public Humanities Collaboratory Watershed Fellowship.

SIGNAL  HILL

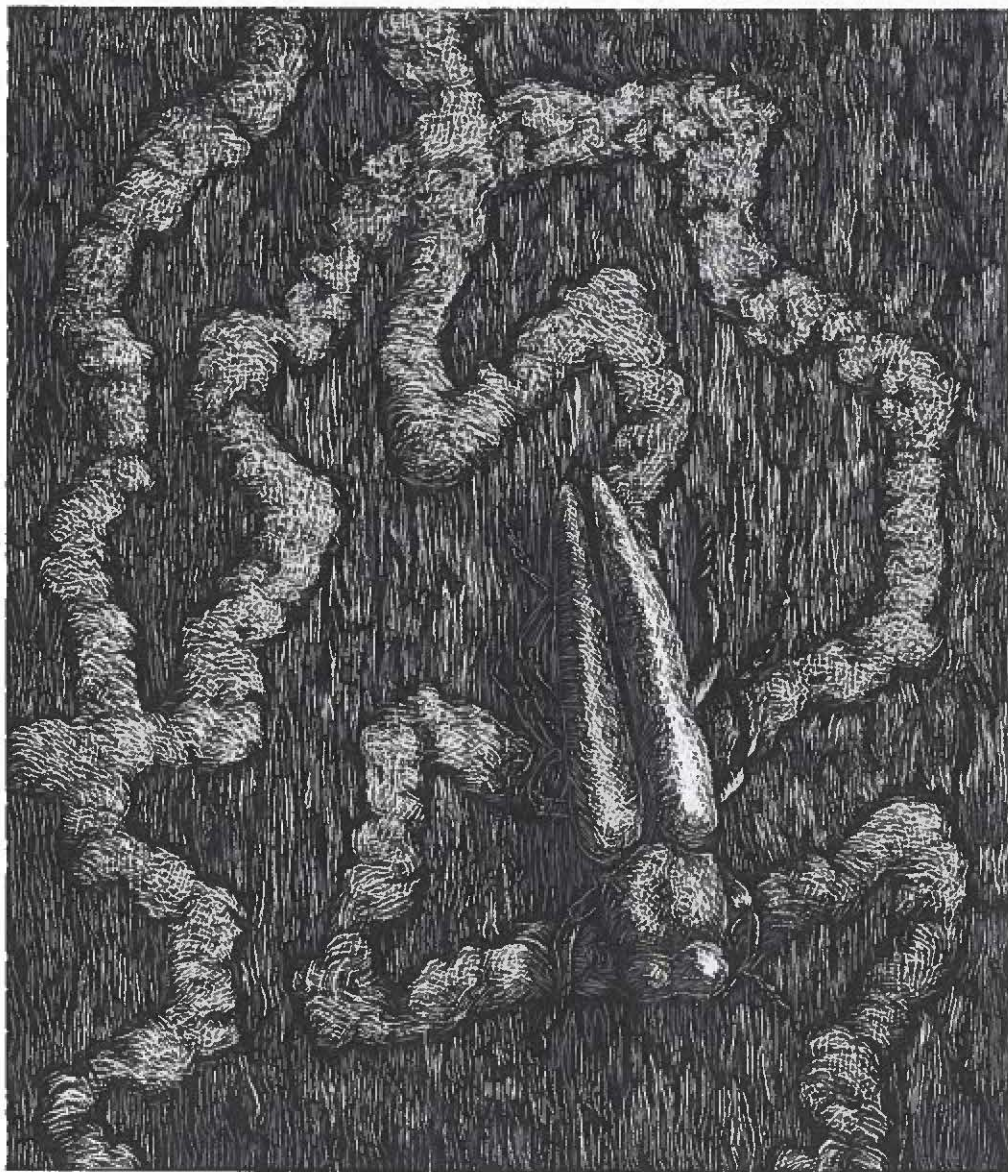
[Listen to the companion audio feature here.](#)

Maze had never seen this particular insect in Oregon, but he recognized it immediately; he'd been expecting it for years. Native to northeastern Asia, the emerald ash borer (EAB) was first found in the United States in Michigan in the early 2000s, after ash trees there began dying for no apparent reason. By the time researchers identified the insects as the cause, they'd already spread across much of the state. Over the next two decades, the beetles continued to spread through the Midwest and East Coast, killing more than 100 million ash trees and becoming the nation's most destructive forest pest. But they hadn't been found west of the Rockies until that summer afternoon when one landed on Maze's son's hand.

That day in the parking lot, after reporting his finding to the Oregon Department of Forestry, Maze sat down on his tailgate to think. The trees in the planter strip were excelsior ash, a non-native landscaping species. Though their loss would make the parking lot hotter, it was no great tragedy. But Maze knew that by the time a tree shows visible signs of decline from EAB, it's already been infested for several years. And each year, female beetles lay 60 to 90 eggs, some on the same tree, others on nearby trees, and a few on trees up to 10 miles away. In other words, the cat was already out of the bag.

"I just sat there, looking around at the other ash trees in the neighborhood," Maze told me. Then he remembered the river. Though out of sight, the Tualatin River was less than a mile from the school, its banks forested almost entirely with Oregon ash. "I thought: Well, this is not good."





FIVE YEARS BEFORE MAZE FOUND THAT FIRST ASH BORER, my family moved to Oregon's Willamette Valley. We bought a house and three acres of unruly woods along the Marys River in Corvallis, just 70 miles south of Forest Grove. When the trees started leafing out our first spring on the land, I recognized some: maple, hazelnut, dogwood. But most were a species I couldn't identify. They held compound leaves and sprawling canopies, some towering as tall as 70 feet and too wide to wrap your arms around. I asked a neighbor, who said, "Those? Those are some *big-ash* trees." When I didn't catch the joke, he chuckled: "Ash trees. They're Oregon ash."

The only ash species native to the Pacific Northwest, Oregon ash grows abundantly in lower elevations west of the Cascades from Washington to California. Despite — or perhaps because of — the tree's ubiquity in the Willamette Valley, I wasn't the only one unable to point it out. In a land of spectacular trees, ash is hardly anybody's favorite. The tree has little commercial value compared to the region's lauded timber species — Douglas fir, ponderosa pine — and it lacks the charisma of the beloved white oak and bigleaf maple. Sometimes described as messy, Oregon ash are asymmetrical and prone to dropping branches. They can



upwards of 80 feet tall but are more commonly medium-sized and clustered in dense stands. They spread prolifically by seed and often pop up in unwelcome spaces: farm fields and restored prairies, lawns and backyard hedges. Because of all this, Oregon ash has long been easy to disregard. “If you look in the scientific literature, hardly anything’s been published on *Fraxinus latifolia*,” Wyatt Williams, invasive species specialist for the Oregon Department of Forestry, told me in 2023. “In fact, up until just now, it’s been considered kind of a weed.” With the arrival of EAB, however, this oft-overlooked tree is gaining new attention. It’s like infrastructure, a friend suggested: No one notices it until the day it breaks.

In the 20-some years since the ash borer appeared in the U.S., foresters and entomologists have developed tools to help slow its spread. Insecticides, expensive and arduous to apply, can be injected into individual trees. Parasitic wasps have been introduced to predate upon the insects. But what’s also become clear is this: There’s no stopping the beetles. Five North American ash species have been listed as critically endangered by the International Union for Conservation of Nature, and Oregon ash is likely to join that list soon. “Worst-case scenario, my prediction is that EAB will spread across Oregon within 10 years,” Williams told me. “Best-case scenario, maybe 30. You can slow it down, but trees are going to die.”

I drove home from Williams’ office that day with the scent of wildfire smoke blowing in my windows and his words ringing in my head. If we know something irrevocable has been set into motion — if we already know where the story begins and where it ends — what, then, do we do with the middle? With that space of possibility in between?

The following spring, when my son was 5 and my daughter 9, the three of us wandered into the woods behind our house. We were out to pick stinging nettles, and the ash overhead had just begun to leaf out. Little fists of avocado-green fingers unfurled from each branch, catching the noon sun. The trees were all brightness, all growth, no signs of decline, and I wondered: How long until EAB reaches this patch of woods? I’d seen photos of “ghost forests” devastated by the ash borer in the Midwest, and I tried to imagine a similar scene here, skeleton trees looming bone-white and leafless over blackberry brambles. I found this both easy and impossible to truly picture, the same way it felt both easy and impossible to imagine the other changes predicted to transpire by the time my kids become adults: 6 inches of sea-level rise. Dry summer heat replacing October rains. A year-round wildfire season.

We passed a low-hanging branch, and up close I could see each new ash leaf was coated in velvety fuzz. I reached out to touch one and startled at the familiarity of the sensation: like running my fingertips over the hairs at the nape of a baby’s neck. My daughter asked what I was doing, and I pinched a leaf from the tree, brushed it against her cheek. She giggled, snatched the leaf and tickled it across her brother’s face. He demanded to know where she got it, and she pointed to the ash. Together, they craned their necks back and looked up into the canopy. Clouds now covered the sun, but even in the muted light the undersides of the leaves shimmered silver, and I wondered: What will it mean to lose these trees?



What will it mean to lose these trees?

What does it mean to *have* them?

My kids ran ahead. Farther down the trail, I found them crouched at the base of another ash. All hushed voices and raised brows, they waved me over. The tree leaned southward, reaching for the sun, and sheltered under its slanted trunk lay a burrow of sorts, a bed-like depression in the dry soil. Tufts of gray fur clung to the edges of the bowl. My kids peered into the little den, but did not trespass; they know a home when they see one.

I watched their careful examination, their wide-eyed wonder, and it occurred to me that maybe I was asking the wrong question. Maybe the more urgent question to ask now, while Oregon's ash forests are still intact, was this: What does it mean to *have* them? What roles do these places play, ecologically and otherwise? Who, for lack of a better word, are these trees? The research, thin as it was, couldn't fully answer these questions. So I set out to talk with people who'd spent their lives alongside ash trees, who might help us piece together something of their story before they're gone.





[Kate Sanworth/High Country News](#)

IF YOU FOLLOW THE MARYS RIVER DOWNSTREAM FROM MY HOUSE, through residential lots, around a neighborhood park and under a highway bridge, you soon reach the Willamette River. And though I'd been thinking about a tree, I came here, to a city park just upstream from the confluence, to talk with a fish biologist named Stan Gregory. Gregory has been in the Department of Fisheries, Wildlife, and Conservation Sciences at Oregon State University since 1971 and has spent much of his career studying the Willamette River Basin.

We met at the edge of a baseball field and followed a trail toward the water while Gregory rattled off a list of fish found in this stretch of river. "Sandrollers. Suckers. Sculpin." The Willamette River, the mainstem of Oregon's largest watershed, flows through the flatlands of the Willamette Valley from Eugene to Portland, gathering all the waters that spill down the western slopes of the Cascades and the eastern slopes of the Coast Range. Its banks hold industrial sites, homeless encampments, wastewater treatment plants, farm fields and all three of Oregon's largest urban centers. In winter, this river runs fast and brown. In the summer, the flow slows, becoming shallow enough to walk across in places, and wafting of algae and warm mud.

The Willamette is not exactly what comes to mind when one imagines salmon habitat, a far cry from the burbling streams that tumble through higher elevations. But this river, Gregory told me, is just as important for salmon and steelhead. To get to their spawning grounds in those more picturesque streams, the fish must migrate through these waters. In fact, the mainstem of the Willamette hosts the greatest diversity of native fishes found anywhere in the watershed, 31 species in all.



We followed a trail through the shade of a mixed riparian forest. Cottonwoods towered high above bigleaf maples, red twig dogwoods and plenty of Oregon ash. The forest here in the park stretches for a little less than half a mile from the river's edge. It's among the widest sections of riparian forest along the Willamette today, but, historically speaking, it's a narrow strip.

In the early 1800s, before settlers came to the Willamette Valley, riparian forests like this extended for miles — as far as seven — from the edge of the main channel. In those days, the river resembled a frayed length of macramé. Braided webs of side-channels and alcoves, sloughs and oxbows threaded across a vast floodplain. In this wet landscape, ash thrived. “It doesn't mind it getting soggy and mucky and inundated with water for several months every winter,” Gregory told me. We'd stopped beside a swale a hundred yards or so from the river's edge where a monolithic stand of ash grew tall. It was late summer and the ground was dry, but in a few months, this swale would fill with water.

“Worst-case scenario, my prediction is that the borer will spread across Oregon within 10 years. Best-case scenario, maybe 30. You can slow it down, but trees are going to die.”

In places like this, Gregory explained, the floodplain takes some of the energy out of the flow of the main channel. Here, the river can spread laterally, increasing the interface between water and land to allow for an exchange of nutrients between terrestrial plants and aquatic life. Fish depend on such off-channel habitats to take refuge from the swift flow of the main channel and to find shelter from predators. “The wet mucky areas along the river where ash trees grow are some of the most important parts.”

These landscapes began to disappear when settlers, lured by promises of a gentle climate, fertile soil and the most generous land giveaways in U.S. history, began pouring into the Willamette Valley in the 1840s. By the mid-1850s, they had claimed nearly all of the land in the valley, and the U.S. had forcibly relocated the Kalapuya tribes to reservations in the Coast Range. The land was as flat and fertile as promised, ideal for farming except for one thing: the river's wild flow. Annual floods washed out farms and settlements alike and prompted an ongoing effort to control the Willamette River and its many tributaries. Settlers and, later, state and federal agencies built dams and revetments, channelized streams and drained wetlands. These processes snipped away at the threads of macramé, simplifying the river into something closer to a single cord and allowing farm fields and cities to march right up to its banks. Disconnected from the forests and side-



channels, alcoves and sloughs that had comprised the river's wide floodplain, the Willamette's health declined.

"It's like our intestines," Gregory said. "We have little villi and things that increase the surface area in the intestine so it can absorb nutrients. Same thing happens in the river. When you simplify a channel, you're just turning it into an export system." The result, he said, apologizing for the unsavory metaphor, was the equivalent of a human experiencing diarrhea: "All the nutrients just shoot on through."

Not so long ago, farm fields covered most of the park where Gregory and I now walked. But in the mid-1990s, Corvallis bought the farmland, intending to develop sports fields, and a group of locals convinced the city to set aside part of it for reforestation. Community members planted native trees in the former fields, restoring a sliver of width to the river's floodplain forest.

Around a bend, the river swung into view again. Willows edged the water, and ash grew thick under cottonwoods. The afternoon sun hung low in the west, and the trees cast long shadows across the water. This, Gregory said, is another thing ash trees do for fish: Create shade. In the Pacific Northwest, most native fish need cold water to survive. But water temperatures have been warming; in many rivers and streams, they now hover at the threshold of what most native species can tolerate. Shade plays a crucial role in keeping waters from further warming.

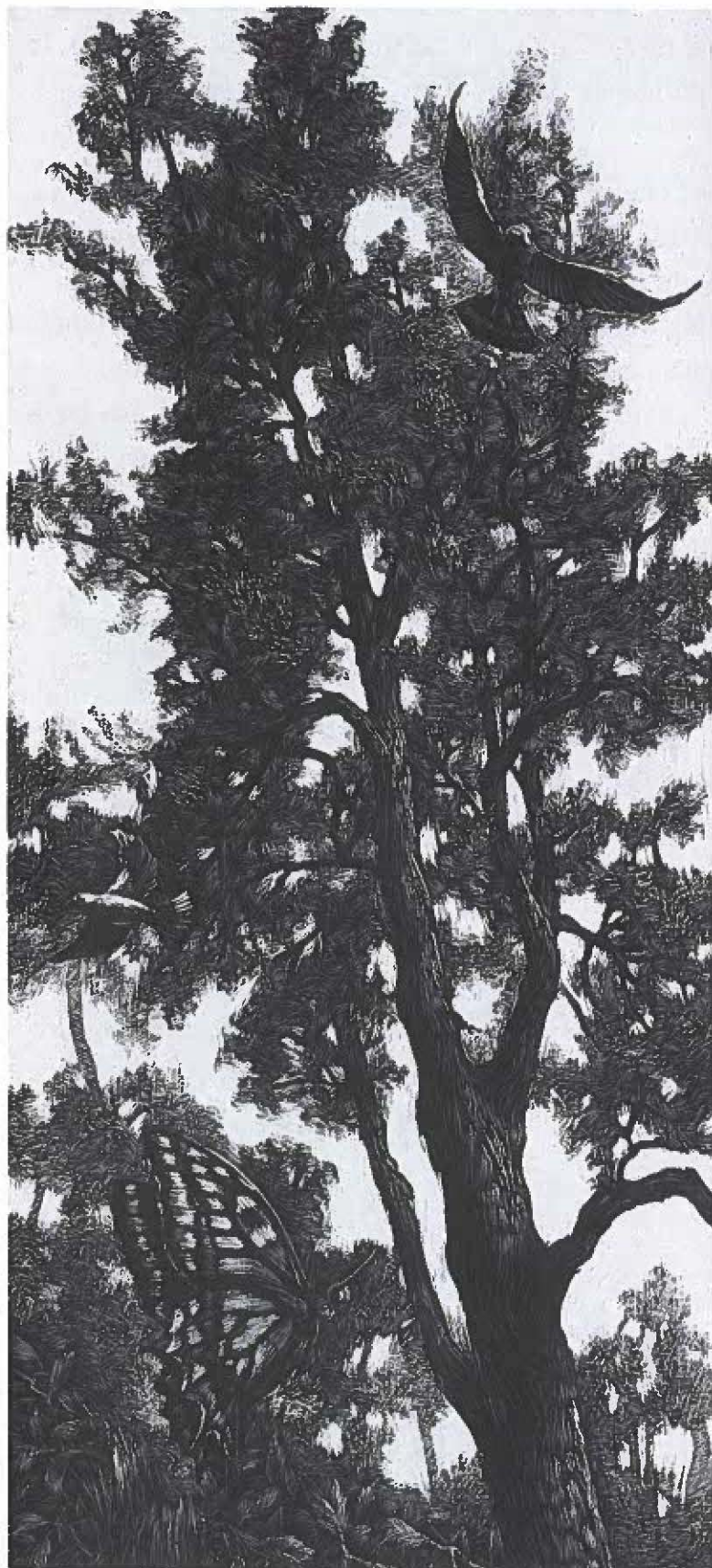
On the banks of the Willamette's main channel, cottonwoods are abundant, and maples and alders, too, grow alongside ash, helping shade the water. But in the off-channel areas of the floodplain and along many of the slower-moving streams and tributaries where soils are heavy and poorly drained, ash is the primary shade tree, sometimes comprising 95% of the canopy. And those waters, Gregory reminded me, ultimately end up here: When they warm, so too does the mainstem. "It's just like the circulatory system in the body," he said. "It's all connected."

A breeze drifted off the river, tousling the ash leaves overhead. One blew loose, and I caught it, held it skyward. Sunlight filtered through the leaf's thin flesh, illuminating its intricate pattern of veins. Thread-



The most destructive forest pest in North America is now in Oregon

at the edges, the veins joined thicker and thicker lines as they moved inward, ultimately intersecting with the sturdy stem down the center. In the body of this ash leaf, I saw a map of the watershed.



[Kate Samworth/High Country News](#)

I HADN'T INTENDED TO TELL MY KIDS ABOUT THE ASH BORER and its arrival in our home region. Why burden them with news of another impending disaster beyond their control? But they overheard me talking about it with a friend, a neighbor, my partner. Eventually, they'd learned the whole story. The news, however, evoked less sadness or fear than it did awe. *How?* my son asked. *How could a tiny beetle kill a giant tree?* I explained as best I could: The beetle's larvae feed on the inner bark and cambium layers of the tree's trunk where nutrients and water are carried throughout the tree. As the larvae eat, they cut serpentine tunnels, called galleries, into this soft flesh, eventually severing the passage of nutrients and killing the tree.

My son wrinkled his nose and shrugged, unconvinced. So one day, in the woods behind our house, we found a fallen limb to investigate. I hacked at the bark with a hatchet until we could see the cream-colored flesh underneath. It was soft and moist, like young coconut meat. My children pressed their fingers into this surprising tenderness, then brought their faces close and sniffed: Not the earthy musk of tree bark, but something tangy and sweet, like cooked grain — sourdough bread or wild rice. I scraped at the tissue, and it peeled off in curls. It was easy to imagine why an insect might pupate here, in the innards of this tree where it is soft, dark. Womb-like.

WHELE FALL COMES TO THE WILLAMETTE VALLEY, ash are among the first trees to change color. In September, they're easy to spot: bursts of bright butter-yellow in a landscape still mostly green. As the season unfolds, their shade



deepens toward a rich ocher. By the time I met Paul Adamus at Adair Park north of Corvallis, in early October, the ash leaves were the color of apricot skins. Adamus is a lifelong birder and renowned wetland scientist. Together, we followed a trail through dense woods. No stream or water body fell in sight and the ground under our feet was dry. Still, Adamus told me, we were walking in a wetland. There are some oaks here and many shrubs, but the forest is dominated by ash. In the heavy clay soils typical of seasonal wetlands in the Willamette Valley, few other native trees thrive.

Minutes into our walk, Adamus had heard a black-capped chickadee, a raven and a brown creeper. “If I did a 10-minute point count here, I could reliably hear or see 10 species,” he said. In the spring nesting season, he would hear 20 or 30. The birds come for shelter and sustenance, finches and grosbeaks feed on ash seeds, while others eat the insects that live in the tree’s bark. Fallen seeds feed rodents, which, in turn, support the hawks and owls further up the food chain. Without ash, it’s hard to know how these birds will fare. “A particular species of concern is the evening grosbeak,” Adamus told me. This bird relies heavily on ash seeds and is already declining for unknown reasons. It’s not only birds who depend on these ash-forested wetlands: larval moths and butterflies including the two-tailed swallowtail feed on ash leaves, bats roost in the branches, deer and elk browse twigs and foliage.

Shafts of sun cut through the canopy, sending shadows kaleidoscoping across the trail as Adamus and I walked back to the parking lot. Fallen leaves carpeted the ground and looking up at the half-bare bodies of the ash trees, I saw what I hadn’t noticed before: Epiphytes. Mosses, thick as wool, shrouded trunks. Lichens tinseled limbs. Ferns spilled from nooks between branches: Each tree, a forest unto itself.

Leaving these woods, I couldn’t help but imagine the cascade of changes sure to befall the place and its many inhabitants once the ash borer arrived. As I considered this future, I found myself wondering, too, about the past. Back home, I pulled out a map detailing the pre-settlement vegetation of the Willamette Valley, compiled from 1850s survey data. When I located the place where the park now resides, I was surprised to see it wasn’t labeled as an ash forest — or any kind of forest at all. Instead, the map described the place as a prairie.

Before Euro-American settlement, the Kalapuya routinely burned the Willamette Valley to sustain the prairie landscapes that provided their staple food sources — camas bulb, tarweed, biscuitroot. Camas grew so thick in some places that, from a distance,

Meet the beetle threatening Washington ’s cherries, hops and other crops



settlers mistook the vast fields of blue flowers for lakes. After tribes were forced off the land, burning ceased. Without fire to keep them at bay, ash trees — fast-growing, easily established from seed, and capable of withstanding even the heaviest clay soils — quickly began to transform prairies into forests. Many of these new forests were later cleared to make way for farms and towns, but in wildlife refuges and parks like the one I visited, in places too soggy to plow and in protected wetlands, these prairies-turned-ash-forests endured. Today, they persist in scattered patches across the valley floor, where, despite their relative novelty, they now provide crucial wildlife habitat in a landscape dominated by agriculture and urban development.

MARKIE HESS GREW UP ON A CATTLE FARM on the banks of Butte Creek, northeast of Salem. Most of her family's acreage was long ago cleared for farming, but along the creek and in the land's bogs, ash trees proliferated. "There was one here that was 3 feet in diameter, but had grown and cracked so many times it created a hollow," Hess told me. "We used to call it the duck blind, because we would go inside and watch the ducks."

I met Hess at her family's farm in November 2024. A few months earlier, a utility worker had reported signs of EAB in an ash tree along Butte Creek a few miles away. It was among the first sightings outside of Washington County, where Dominic Maze found the beetle in the school parking lot. Hess participated in a training to learn how to identify signs of the beetles and soon found them in the trees at her childhood home.

She showed me the first tree where she found evidence: cracking bark and D-shaped exit holes. I traced my finger over a puncture. The size of a lentil, it was rounded on one side to fit the curve of the beetle's back, straight on the other to match its flat abdomen. Once infested with EAB, ash can survive for three to five years. When the trees here begin to die, Hess told me, it won't be easy to manage. "We can't just get in there and get the trees out." Many are hard to access, and hiring arborist crews is expensive. "My family is a small operation. My dad works full-time as a truck driver. This is not something that he can afford." Dead trees offer important wildlife habitat but can be hazardous for people below, which will make it difficult to manage the invasive shrubs like blackberry and ivy that will thrive in the increased light once the trees die.

Hess and I walked along Butte Creek in the dimming light of evening. In the distance, storm clouds gathered, threatening rain. "One of the things we've been talking a lot about as watershed workers is: How can we replace these trees?" Hess works as a restoration specialist for the Pudding River Watershed Council. Recently, the council's efforts to improve the health of the region's waterways — installing livestock exclusion fences, revegetating banks, adding large wood to creeks — had begun to show results. "We saw some lamprey this year," she said, a sign that things were improving. But the coming ash crisis will hamper that progress. "It's like you're climbing a hill and there's a rockslide."

Not much could be done for the trees, Hess knew. But there is a lot to do for the watershed. Maybe the loss of ash could help draw attention to the importance of the places where it resides. Maybe it could help



propel forward other projects — dam removals, floodplain reconnection — to improve the health of these landscapes, even while we lose this tree.

If we know something irrevocable has been set into motion — if we already know where the story begins and where it ends — what, then, do we do with the middle? With that space of possibility in between?

THE FOLLOWING SPRING, after days of heavy rain, my children and I walked across town toward Willamette Park. We wanted to see the river in flood. A drainage ditch traced the highway and we paused on a bridge to look down. The water flowed hot-chocolate brown and cluttered with trash: plastic bottles, a tennis shoe, a bike tire, a half-submerged shopping cart. I cringed at the sight, but my son noticed something else:

“Look,” he pointed, “ducks!” Two mallards floated in a shady eddy, and they weren’t the only creatures here. Squirrels rascaled through the thicket of trees flanking the stream, a spotted towhee and a group of gray songbirds perched in the foliage. I scanned the drainage: As far as I could see, the trees were all ash.

Though I’d once hardly noticed pockets of ash woods like this one, now I seem to encounter them everywhere I go; they’ve become, perhaps, my favorite kind of ash forest. These groves don’t grow in parks or preserves, but are instead sandwiched between residential developments and railroad lines, clustered under freeway bridges, behind gas stations, and in narrow ribbons along roadsides. In these margins, ash trees have salvaged scraps of land discarded by agriculture, urbanization and conservation alike, and transformed them into forests.

When we reached the park, the flow was so high it blocked the entrance. So we stood on a hill and took in the view: Water spilled through the forest, swallowing the trails and sports fields, the boat ramp and the parking lot, turning it all, once again, into river.

ON A FOG-THICK MORNING, I drove 45 miles northwest of Corvallis to the rural community of Willamina in the foothills of the Coast Range. Outside a metal shop building, I parked in the shade of an tree. But the ash I’d come to see today was inside.



Here, Brian Krehbiel, a canoe builder and member of the Confederated Tribes of Grand Ronde, was painting epoxy across the hull of a canoe. The canoe's main body was built of laminated plywood, but the thwarts — the bands of wood stretching across the opening — were made from ash. "I use a lot of modern materials for my canoes," Krehbiel told me. But for the thwarts and paddles, he still uses the traditional material: Oregon ash. The wood produced by this tree, Krehbiel explained, is especially well-suited to these purposes. It's remarkably strong, and unlike many other hardwoods, ash has the ability to flex upon impact, so it won't break when met with force.

Krehbiel traces his heritage to multiple tribes, including Chinookan ancestors who lived along the Columbia and Willamette rivers. They were among the dozens of tribes that the U.S. government forcibly relocated from their lands to a reservation near Krehbiel's shop in the Coast Range. Small streams and creeks traversed the land they were left with, but no large rivers. "There was no need for canoes on our reservation," Krehbiel told me. Growing up, he knew little about the significance of canoes to his culture, much less how to build one; colonization had stripped his ancestors of their ability to openly practice many of their traditions in public. "My grandma had stories of getting hit with a yardstick for speaking her language," Krehbiel said. "No songs, no dances, you were locked up if you did any of that." Still, his forebears passed on what they could. "And that little bit of culture, that little bit of knowledge that grandma taught us, that little bit of language, it planted a seed inside us."

As an adult, Krehbiel worked for his tribe as a cultural resource specialist. He learned a lot and also realized just how much he didn't know. "I was hungry for any little piece of knowledge. What plant is that? How do you make that basket?" In 2005, his tribe was invited to participate in Canoe Journey, an annual event where Native communities from around the Pacific Northwest paddle ancestral waterways and gather at a final destination. But they no longer had any traditional canoes. After tribes were forced off their lands, Krehbiel said, settlers burned many of the canoes left behind. "That way we had nothing to go back for." So in preparation for the trip, he and other tribal members built a 32-foot canoe — his tribe's first new canoe in over a century. That year, they paddled to Lower Elwha, on the Olympic Peninsula.

"When we landed, there were 109 canoes coming across the bay all at once, and the beach was just littered with people cheering for us," Krehbiel told me. "It was like: '*Hey, we're Somebody.*'" The camaraderie and connection to the people and the water he felt on the trip was euphoric. He attended several more Canoe Journeys, and each time he returned home more inspired to build a canoe that lived up to his tribe's traditional designs.

In 2012, Krehbiel learned of one existing Chinook-



style canoe. It was stored in the Oregon Historical Society's museum, where it had been donated from the estate of James Scarborough, a white man who settled on the Columbia River in the mid-1800's and married a Chinook woman. The canoe was made from a red cedar log in the style of a traditional Chinookan dugout. After discovering this canoe, Krehbiel began working with a local boat builder to design and construct a canoe modeled on the shape and style of this one, but made from a combination of modern materials, such as laminated plywood, and traditional elements like ash thwarts instead of a single log. He now builds tribal canoes professionally and has more orders than he can keep up with.

A canoe journey to Alcatraz on Indigenous Peoples' Day

Over the years since Krehbiel's tribe first attended Canoe Journey, many other traditional practices have undergone a revival in his community: weaving, carving, language, dance. "Once our canoe came back, that's what opened up our eyes." He told me. "All that good stuff came back with that canoe."

On the day I visited, Krehbiel's shop brimmed with works in progress. Canoes stretched over sawhorses, chisels and hand planes hung on the walls, and paddles leaned into corners. He handed one to me, and I ran my fingers along the length of ash. It shone silk-smooth and straw-colored. A paddle, Krehbiel said, has a relationship to the water, to the canoe, and to the person paddling: It's the link connecting each to the other. "Ash" he said, "is what moves us."





Kate Samworth/High Country News

BEFORE THE ASH BORER WAS FOUND IN OREGON, Wyatt Williams, of Oregon Department of Forestry, asked foresters from the Midwest what they'd have done to prepare had they known it was coming. Everyone agreed: "We wish we had collected seeds. We had no idea it was going to spread so fast, and we have no native seeds left." So, in 2019, three years before Maze found that first beetle, the agency began gathering Oregon ash seeds from across the state.

Most of the seeds — nearly a million — were sent to long-term storage facilities. At the U.S. Forest Service's Dorena Genetic Resource Center in Cottage Grove, some have been used to plant trial plots in an effort to find EAB-resistant genetics. The trees in these plots, now a few years old, will grow until the beetles reach them. Then, researchers will watch for signs of natural resistance. If a tree shows resistance, researchers can match the tree to its parent and use those genetics to breed EAB-resistant ash populations that might one day be returned to the landscape. Similar efforts are proving successful with other species: breeders have developed Port Orford cedars able to resist a devastating pathogen that causes root rot, and have found genetic resistance to blister rust among western white pines.



“If you were to come back in 10,000 years, there would be ash here,” Williams told me. The trees, he explained, would eventually develop resistance, like the ash species in EAB’s native range. There, where the insects and the trees have co-evolved, only stressed trees are killed by infestations and healthy trees are unharmed. In those ecosystems, the borers contribute to healthy forests by culling sick or injured trees. “It just takes 1 or 2% of the trees to be resistant and for them to find each other, mate and produce seeds,” Williams said. With the help of researchers, he hopes these trees might find each other sooner rather than later.

Back in Willamette Park, walking through the floodplain forest with my children at the start of another winter, I thought of Williams’ words and tried to imagine returning to this place in 10,000 years: would anything be recognizable? At the ash swale where I’d stood on dusty ground with Stan Gregory in summer, the trees now waded knee-deep in still water. The pond formed a perfect mirror, reflecting a forest turned upside-down. Looking at this inverted world, I found myself thinking not of the trees, but of the beetles themselves.

“If you were to come back in 10,000 years, there would be ash here. It just takes 1 or 2% of the trees to be resistant and for them to find each other, mate and produce seeds.”

Since they arrived unnoticed, we don’t know much for certain about their journey to the U.S. But researchers believe it went something like this: Somewhere in northeastern Asia, an ash tree was cut. Out of sight beneath its bark, lay hundreds of EAB larvae. The tree was milled into lumber and turned into a packing crate, or loaded whole into the hold of a ship to stabilize a load. Either way, the larvae remained inside the wood. Some days or months later, that ship set sail and they embarked on a 6,000-mile trip overseas. I don’t know if the larvae knew they were moving, realized the landscapes around them were shifting, or if they were entirely unaware, curled in the darkness, attending instead to the steady work of metamorphosis.

When the boat reached Detroit, the wood was unloaded at the port or hauled to a dump site nearby. In spring, sunlight struck the wood and the warmth nudged the creatures inside awake. No longer gummy grubs but hard-bodied beetles, they chewed their way out and emerged into the strange light of a Midwestern morning.

It’s an impressive feat, to survive the felling of the tree and the trip around the world. But it’s what happened next that amazes me most. The beetles looked around — or, perhaps more accurately, *smelled* around, seeking the particular chemical compounds emitted by their host tree, their partner in this life: ash. The insects and



trees had evolved alongside one another so that the beetle was now dependent on this tree to feed its larvae. Without ash, emerald ash borers cannot survive. It seems unlikely, then, almost impossible, that creatures known to fly typically only a mile or two in their entire lives could survive such a drastic relocation from their homeland and their original host.

And yet, here on the shores of a distant continent, the beetles caught wind of a familiar scent and made their way to its source: an ash tree. It was not the same species, but closely related. Similar in nearly every way except one: this tree lacked resistance to the new beetle. The borers began to nibble its foliage and soon laid eggs on the bark. When those eggs hatched, the tiny larvae tunneled into the bark as their instincts instructed them to and found it hospitable. The next spring, a new generation emerged. Before long, the insects had made a home here in a faraway forest and, in doing so, began to transform it.

My children and I followed the trail to the river's edge, where mud gave way to gravel. The flow was high after a week of rain, and the water surged past. Fallen leaves collected in drifts on the gravel bar. The ash were bare except for the lingering clusters of seed ornamenting their branches. I thought of the mice and squirrels that would feed on those seeds through the long gray winter, and of the owls and hawks swooping through the woods hunting for those rodents.

When I asked Stan Gregory if he thought the loss of ash would prove catastrophic for the ecosystem here, he surprised me. "No," he said. "But it will be changed, greatly." Then he asked aloud the obvious next question: "So where's it all going?" To this, he had no answer. "The toughest thing for me is trying to anticipate the future river because it's changing constantly. It's changing right now in front of us."

When I first learned of the emerald ash borer's arrival in Oregon, I understood the moment as the start of a story with a known end: First, there were ash forests here; soon, there'd be none. Now, these two fixed points no longer seemed to contain the narrative. I thought of the places I'd been — prairie turned ash woods; floodplain turned farm fields; farm fields turned forest. I thought of Krehbiel's canoes, and of the lamprey returning to Butte Creek. I thought of the many landscapes and lifeways that had disappeared from this valley, those that had returned, and those that were emerging anew, and could locate no such moments of stasis — no beginning, no end. Instead, it appeared we live always just right here, in the murk of the perpetual middle — that space of possibility in between.

"We humans don't live too long," Gregory said.

"We tend to think in short windows of time; the river has been here for hundreds of thousands of years."

I plucked an ash seed from a branch, held the single-



winged samara in my palm. A slender oval narrowing to a point at one end and rounded at the other, the whole thing was slightly cupped. The shape, a forester recently told me, resembles a canoe. Because ash grow near water, he explained, some believe this shape has evolved to help the seeds float so that the tree might spread its progeny downstream.

What if the future is the past?

I carried the seed to the river's edge and dropped it in: It floated. My daughter picked a dozen more and tossed them over the water. They twirled downward, settled near the bank. Then, with a long stick, my son nudged the seeds away from shore until, at last, the current gathered them up and whisked them away. We watched the fleet of tiny canoes sail out into the wide river and rush north. A moment later, they were gone.

We welcome reader letters. Email High Country News at editor@hcn.org or submit a [letter to the editor](#). See our [letters to the editor policy](#).

This article appeared in the [October 2025 print edition of the magazine](#) with the headline "Portrait of a vanishing tree."

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**LU-24-027: Fresh trash in Polk Co. farm fields - Green Spring** October 22, 202**Farms to county line**

From: Joel Geier

To: landfillappeals

Dear Commissioners Wyse, Malone, and Shepherd,

As you know, the Benton County sheriff's department contracts with Republic Services to provide inmate crews to clean up trash along Hwy 99W.

But they stop at the Polk County line. [Today](#) while returning home via Airlie, Rebecca Sherman Geier and I wound up behind an 18-wheeler belonging to Wheat LLC, a company which regularly hauls trash and perhaps also ash from Brooks in Marion County.

Although the truck was tarped on top, it was still losing big pieces of plastic which went floating out into farm fields, all the way from Green Springs Farm (Suver / Suver Junction) to Robison Road at the county line. It continued south and turned into the landfill entrance. No doubt the trail of trash went all the way back to Rickreall and on through West Salem.

Like most trucks that haul trash to the landfill, this one's license plate was so filthy that it was nearly impossible to read, until it slowed down to turn into the landfill. There we could make out numbers 74034 on the trailer plate (Oregon plates). The company's trailer number higher up on the back was 5007. The time when it turned into the landfill was about 10:50 AM.

This is just one out of a hundred or more similar incidents that we witness every year. We've tried reporting these incidents both to DEQ and VLI, but the problem is never addressed. And here it is, continuing right up to the first day of the hearing for this appeal.

No doubt if you ask them, the VLI's representatives will tell you that they're not responsible for third-party haulers. We hear that all the time. But these third-party haulers wouldn't be spreading trash along our roads and out into local farm fields, if not for VLI's operation. Expanding the landfill will just expand this ongoing impact on local farms and residents.

Once again, please uphold the carefully considered, unanimous decision of your own Planning Commission, and deny this appeal.

Yours sincerely,
Joel Geier
38566 Hwy 99W
Corvallis OR 97330

[Mail](#) [Contacts](#) [Calendar](#) [Tasks](#) [Briefcase](#) [Preferences](#) Cheryl ju:[Close](#)[Reply](#)[Reply to All](#)[Forward](#)[Delete](#)[Spam](#)[Actions](#)**Automatic reply: LU-24-027: Fresh trash in Polk Co.**

October 22, 2025 11:54 AM

farm fields - Green Spring Farms to county lineFrom: [Coffin Butte Landfill Appeals](#)To: [Joel Geier](#)

Hello,

Digital submission to the public record for LU-24-027 closed on [October 20](#) at 5:00 p.m. in order to allow the Benton County Board of Commissioners an opportunity to review submitted documents before the scheduled public hearing. As such, this email is no longer being monitored.

If you wish to submit further written testimony, physical submission will continue to be accepted while the record is open. This includes submissions via mail or delivered in person to:

Board of Commissioners Office (Suite 100)

4500 SW Research Way
Corvallis, OR 97333

You may also deliver a physical copy of your testimony to the upcoming appeal hearing for LU-24-027 before the record is closed. It is being held at the **Benton County Fairgrounds Auditorium**, scheduled for [October 22 and 23, 5:30 to 10:00 p.m.](#)

If you have questions or concerns, please reach out to the Benton County PIO team at PIOinfo@bentoncountyor.gov.

Thank you for your engagement in this quasi-judicial process,
Benton County Board of Commissioners Office