



AN ABSTRACT OF THE THESIS OF

Abby P. Metzger for the degree of Master of Science in Environmental Science  
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Title: Meander Scars: Reflections on Healing a River

Abstract approved:

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Kathleen Dean Moore

As Europeans settled the Willamette Valley in the 1800s, they began to simplify Oregon's largest river contained wholly within state borders—the Willamette. The river lost miles of channels from dikes, dams, and development. Some channels vanished under concrete. Others became meander scars, or shallow, dry depression in the land where the river used to wander. Besides being a geological feature, meander scars are reminders of the wounds of progress and our attempts to control the river.

Through a series of personal essays, this book reflects on whether something scarred can once again be whole. It explores a simple question with no single answer: How can we heal a river while healing our relationship to it?

The book begins with the history of the Willamette, when it was wild and free, and then moves into all the ways we simplified and left it scarred. The story then reflects on what we might value in healing a river—values such as the complexity of the water's many truths; values of memories and stories that hold the history of a landscape before it was degraded; and values even of grief and danger, which bring us closer to places in unexpected ways. The final reach of the book explores the role of

restoration in healing the Willamette—whether working to repair the earth  
compensates for our misdeeds, and whether restoration is a reflexive act in which  
participant and landscape are both made anew.

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Meander Scars: Reflections on Healing a River

by

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A THESIS

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I understand that my thesis will become part of the permanent collection of Oregon State University libraries. My signature below authorizes release of my thesis to any reader upon request.

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Abby P. Metzger, Author

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I would like to thank my major professor, Dr. Kathleen Dean Moore, for her enduring support and encouragement. It was Dr. Moore who first suggested I write a book about the Willamette. I followed her advice and undertook a project that inspired me to think about the world in new ways. I could not have written a single essay without her wisdom, insight, and sharp eye. She has been an invaluable mentor and willing collaborator.

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My parents also deserve thanks for taking me to the Willamette River as a child. These early experiences awakened a love for the land under my feet. Dad, thank you for teaching me how to identify my first bird, the white-crowned sparrow. Mom, thank you for teaching me that something as ordinary as picking blueberries can be an adventure.

Finally, I would like to thank my husband Ben. Some years ago, he asked me to go kayaking on the Willamette River, and I said yes.

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## Meander Scars: Reflections on Healing a River

### Introduction

I live by a river that flows through a broad valley between two mountain ranges, a river called the Willamette. Today I sit on a gravel bar and watch herons fly through cottonwoods and in between their knotted nests. The day is hazy and washed out, but the river surges. Its surface holds a light stronger than the sky.

I am alone, but not lonely enough to believe I am the only person to have sat on this shore. I can imagine a Kalapuya boy fishing along this edge of rock and water. I can imagine European settlers pressing their boots into the nearby soil—men like Joseph C. Avery and William F. Dixon. When they came, these settlers left more than boot prints. Some city parks and creeks are named after them.

For all I know, the nineteenth-century Oregon poet laureate Samuel Simpson sat here and wrote his “Beautiful Willamette,” a pastoral poem about a river that threads across a valley floor before spilling into the Columbia and surging to the sea. I can still see the Willamette just as Simpson wrote about it, that “Waltzing, flashing / Tinkling, splashing [river] / Always hurried / To be buried / In the bitter, moon-mad sea.”<sup>1</sup> Somehow, the river carries light even when the world is grey.

What Simpson didn’t write about was how we have wronged this river, those lapping shadows of progress. He didn’t write about the big eighteen-wheeler truck

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<sup>1</sup> St. John, P. & Wendt, I. (Eds.). (1993). *From here we speak: An anthology of Oregon poetry*. Corvallis, OR: Oregon State University Press.

lugging behind the heron rookery right now. He didn't live long enough to write about the plume of steam and whatever else coming from Evanite Fiber Corporation. When he sat here—pretending for a moment he did—Simpson likely didn't see a swath of sky filtering through the thin line of trees in front of me. Surely, the thick woods of his day let in only glints of daylight. Simpson didn't live long enough to see city grids bury channels or the installment of Interstate 5. He never saw the twenty-foot rock wall that lines the Corvallis riverfront and keeps the Willamette from “Waltzing.” What kind of poem would Simpson write today? Would it be reverent, or full of guilt and sorrow?

Simpson got many things right in his poem, but one thing he got wrong was that this river would never be wounded. “Time that scars us, / Maims and mars us, / Leaves no track or trace on thee!” he wrote. Time *does* scar us, leaving us limp to passing moments and an inevitable end. But time has also scarred the river.

The Willamette River's scars can be seen across the valley floor. Rivers naturally erode on their outside bends, creating a rounded curve called a meander. Sometimes the river meander breaks away and becomes a horseshoe-shaped lake, called an oxbow. When the water dries, the oxbow becomes a meander scar, or the remnants of a wandering water channel.

The term “meander scar” is puzzling because a scar is a sign of wound repair. It's what time and the healing power of the earth have made of a harm, which suggests humans see rivers as inflictors of wounds that need our intervention to heal. But I

think this is all wrong. The real wounds—the real acts of harm in need of reconciliation—are the ones we’ve committed to this river like draining, filling, and building over channels. Through the years, some channels vanished under concrete. Others became meander scars, those reminders of *our* hurt; those faint depressions in the land that still bear a shadowy resemblance to a river.

I began to research how the Willamette’s channels either disappeared or became meander scars, wondering what kind of redemptive act could undo this harm. And in my research, I realized how little I knew about the history underneath my feet, despite years of playing by the water and skimming stones across its dappled surface. I didn’t know the river’s rhythms and former wildness, or the way it used to flood and create channels from year to year. I did not live in acceptance of its cycles or understand the elusive beauty of a river both stunning and flawed. The more I learned, the more I felt something inside me was also severed and scarred, in need of time and contemplation to heal.

To make up for ecological loss, environmental groups are now proposing ways to reconnect former channels, in the same way I am searching for ways to reconnect to the river of my birthplace. I want to expose my life, bare root, to the messages of the Willamette and let river water spill into untraveled places. I have an urge to learn the meaning within an eddy’s quiet swirl, or understand the power of a fish cutting upstream. There must be some lesson about wonder and awe hidden in the mist lifting from a stream, or that line of light carried downriver. What I hope to find is the

restorative power of the river's washing, to come to a place of recovery, both for the Willamette and my relationship to it. By healing the land and ultimately ourselves, we might find the bedrock of renewal even in the stir of destruction and hurt.

This book reflects on whether something scarred can once again be whole. It explores a simple question with no single answer: How can we heal a river while healing our relationship to it?

If this book were a river, it would move from the headwaters of loss to the ocean-bound surge of reconciliation. It begins with the history of the Willamette, when it was wild and free, and then moves into all the ways we simplified and left it scarred. The story sputters and spills into a series of quiet pools that reflect on what we might value in healing a river—values such as the complexity of the water's many truths; values of memories and stories that hold the history of a landscape before it was degraded; and values even of grief and danger, which bring us closer to places in unexpected ways. The final reach of the book explores the role of restoration in healing the Willamette—whether working to repair the Earth makes up for our misdeeds, and whether restoration is a reflexive act in which participant and landscape are both made anew.

Not long after I started this project, I dreamed I walked barefoot to the Willamette's shore. Tall willows crosshatched a full moon that spilled wet light into shadows. I climbed a tree and sat on top of it, like John Muir did to watch a windstorm. From

above, flecks of starlight sprinkled the land. From below, the water laved colorful stones that hissed at the current's touch, and the river tumbled so loudly it might have been a windstorm.

In dreamtime, I sat for hours in the tree and watched the Willamette carry sediment from some other place to the sea. A river is the one thing I know that is always arriving and always leaving, always eroding yet always building. The river carries rain, stone, wood, leaf, and all our misdeeds. All at once, it holds loss, beauty, sorrow, and renewal. I am learning how to hold all these things, too.

## The First Sighting

I am out before the sun, but a morning glow pours across a line of trees on the Willamette's eastern bank. Splotches of leaves have turned burnt orange and blazing yellow, spreading like a brush fire through the cottonwoods, maples, and ash. Lacy mist weaves its way upriver. With a trail of breath following them, bicyclists in poofy jackets pedal across a nearby bridge. The air coats my lungs with an odd sense of emptiness—the winter ahead and months of low light.

Out here, I sense the air's slouch towards fall and the emptying of summer to a season marked by absence more than anything else. The birds quiet. Trees drop leaves. The land prepares for rest. Today the stillness of the land invites a stillness of mind—a time of reflection and wonder.

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I once took a personality test that claimed it could demystify all my quirks, bad habits, and dreams. It said people like me often fantasize about going back to the past and fixing wrongdoings. I confess I have imagined myself as a time-traveling Wonder Woman who corrects the most horrid of our mistakes. It's something I've done since I was a child. At various times, I've imagined the good advice I would tell Cortes, Columbus, and Cook. Then I would come back to a world overflowing with kindness and good.

I've had a fantasy about the Willamette River too, the river of my childhood. It goes something like this: Armed with the latest studies in stream ecology, I warn the Oregon pioneers about the dangers that come with filling in side channels and building dams. I show them a map of the current river with its single channel and tell them it doesn't have to be this way. There are choices.

Ridiculous, I know. Because even if the settlers listened and built their homes and farms away from the river, maybe the story would find a different way to the same conclusion. Or I might return from time traveling and find my own home vanished, since it was built in what used to be the floodplain. Despite the foolishness of my fantasies, I can't help but wonder what it must have been like to see the Willamette Valley as a settler. I try to imagine the first boats traveling long distances to chart the new land. What did they see and what did they feel while looking at lands unsettled by Europeans?

More than a decade before Lewis and Clark entered Oregon Country, an English explorer named Lt. William Broughton traveled up the Columbia on the *HMS Chatham* and viewed something no white man had ever seen: the mouth of the Willamette River.<sup>2,3</sup> It was October. Haze knit a white veil over the voyagers' eyes. Despite the stinging air and the weariness that came with being at sea, Broughton was determined to ascend the Pacific Northwest's Columbia River.

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<sup>2</sup> Mockford, J. (2005). Before Lewis and Clark, Lt. Broughton's river of names: The Columbia River exploration of 1792. *Oregon Historical Quarterly*, 106(4), 542-567.

<sup>3</sup> Corning, H. M. (2004). *Willamette Landings* (3<sup>rd</sup> ed.). Portland, OR: Oregon Historical Society Press.

With his courage tested from living solidly on a wind-tossed ship, and his voice hoarse from yelling orders, Broughton faced the Columbia, that wily bronco of a river that could buck boats from its back like flies. Two giant basalt walls cradled the Columbia, yet the river's opening hid in the vastness of the sea. Some early explorers mistook it for a major strait and missed the entrance altogether. But Broughton would enter the Columbia, travel farther than any European explorer before him, and see the Willamette River.

The native Kalapuya people may have called a portion of this river Wal-lamt<sup>4</sup>, which might mean green river. Maybe Broughton saw eddies like giant emerald pendants swirling from bank to bank, or a massive fall run of spawning Chinook salmon, their blushing flanks moving headlong against the current. Did he see, as I have seen, an understory of mist on the water curling toward the sky? Or the yellow torches of fall cottonwoods sending up their flares? Whatever the case, in 1792 Broughton saw a river and surrounding landscape that I might not recognize today.

From the journal of the expedition's captain—George Vancouver—we know Broughton and crew came across deserted Indian villages and canoes holding the remains of the dead, a kind of sepulchral ritual Broughton and his party did not understand. When they reached the Willamette—what they named the River Mannings—Vancouver described the entrance as about a quarter of a mile wide, with

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<sup>4</sup> McArthur, L. A. (2003). *Oregon geographic names* (7<sup>th</sup> ed.). Seattle, WA: University of Washington Press.

the adjacent country “extending from its banks present[ing] a most beautiful appearance.”<sup>5</sup> That is all he wrote of the river where I live.

If I could go back in time to visit Broughton, perhaps I would tell him to look kindly on the river. The water is not just a highway for humans, I would say, but a place valued for the sake of its existence, a home for the wild, a refuge for the spirit.

Of course, Broughton was not the first to see the Willamette River. Not even close. The first witnesses were surely animals, and generations of them, since the Willamette River Basin formed over time. The story begins thirty-five million years ago when a seafloor slab attached itself to the continental margin, ultimately becoming the valley floor. Mountain ranges formed, alluvium filled the valley, and a series of basins developed from the northward movement of the Pacific Plate.<sup>6</sup>

Then, between 18,000 and 12,000 years ago, superfloods of unimaginable speed and power swept into the valley, caused by glacial meltwater that ruptured from ice dams near present-day Missoula, Montana. Meltwater coursed hundreds of miles downstream with flows nearing sixty miles per hour in the Columbia Gorge. To imagine it, picture in less than two weeks’ time—the typical length of a flood—more than the *annual* volume of the entire world’s modern rivers surging through the

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<sup>5</sup> Vancouver, G. (1926). *The exploration of the Columbia River, 1792: An extract from the journal of Captain George Vancouver*. From the press of the Longview Daily News, Longview, WA.

<sup>6</sup> Alt, D. & Hyndman, D. W. (1981). *Roadside geology of Oregon* (2<sup>nd</sup> ed.). Missoula, MT: Mountain Press Publishing Co.

Columbia corridor.<sup>7</sup> I know. It doesn't help. It's just too hard to imagine. All that water cutting into stone and laying down alluvium time and again created a fertile valley and a river that would attract thousands of settlers.

A couple thousand years after the Missoula floods, the first people migrated into the Willamette Valley and saw the river. They were the Kalapuya people, made of several independent bands connected by language. For more than 9,000 years, the Kalapuya lived with the Willamette and surrounding land, fashioning tools with bone, wood, and stone, and harvesting plants for food and basketry. Using lines made of willow bark and lures with human hair, they fished for salmon, cutthroat trout, suckers, steelhead, and possibly sturgeon.<sup>8</sup> At Willamette Falls, the Kalapuya fished for an eel-like species called lamprey while trading with other bands. Willamette Falls in particular helped build long-term kinships between tribes, and still does today, says David Lewis, PhD, a member at the Confederated Tribes of Grand Ronde and the manager of the Cultural Resources Department.

The Kalapuya were the first stewards of the land. For roughly two hundred years, they managed the valley with fire. Historians and anthropologists don't know the frequency or scale of the burns, but periodic fires maintained a prairie habitat that

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<sup>7</sup> Branscomb, A. (2002). Geology. In D. Hulse, S. Gregory & J. Baker (Eds.), *Willamette River Basin atlas: Trajectories of environmental and ecological change* (2<sup>nd</sup> ed.) (pp. 8-9). Corvallis, OR: Oregon State University Press.

<sup>8</sup> Juntunen, J. R., Dasch, M. D., & Rogers, A. B. (2005). *The world of the Kalapuya: A native people of Western Oregon*. Philomath, OR: Benton County Historical Society and Museum.

provided food sources such as game, camas, and tarweed. Fire also kept out weeds and competing vegetation. It allowed hazelnuts and acorns to flourish, two other food sources of the Native people.<sup>9</sup>

More than two hundred years after Broughton made his trek on the *HMS Chatham*, thousands of years after the Kalapuya entered the valley, and thousands more after the Willamette was formed, I would get my chance to see this river. At least a side of it I never knew.

A guest lecturer came to one of my graduate classes to speak about the Willamette. He showed us a historical map of the river with a knot of channels tangled upon itself, a complex river unlike the single channel that flowed near my house. I had never seen this river. In school, I had learned about the Trail of Tears, but not the indigenous people removed from their ancestral lands near my home—the Siletz, Yamhill, Clatsop, Tillamook, and Coos. I learned about the ancient Appalachians but not the Oregon coastals; the Mississippi and Colorado, but not the Willamette and all that had been lost.

Everyone in the graduate class sat calmly, but embarrassment flooded me. How is it that in all my years playing in the water, skipping stones, and listening to the lilting songs of the Swainson's thrush, I never knew about this river? Had I been

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<sup>9</sup> Juntunen, J. R., Dasch, M. D., & Rogers, A. B. (2005). *The world of the Kalapuya: A native people of Western Oregon*. Philomath, OR: Benton County Historical Society and Museum.

asleep? Who else has never seen this river? And what is the danger of not knowing what a river has lost?

New experiences can seep in quietly like water inching through earth. Or they can strike like a heron spearing its bill into the silver side of a minnow. Seeing a map of the historical Willamette came to me like the heron, setting off a near-frantic search for more information to fill in the incomplete picture I had of the world.

As I learned more, new realities surfaced. Things once obscured by half-told truths became clearer, and sometimes muddled once again. “You never step into the same river twice,” said Greek philosopher Heraclitus. I discovered this simple fact each time I learned something new about the Willamette and saw it again for the first time.

Sometimes I stepped in the water and the cold of it cut like metal’s edge. Other times, the water brushed across my calves in a soft kiss. Sometimes the river caught the sky in a near-perfect reflection. Other times, the river dimpled and bent it beyond recognition. How could one river offer so many things?

In my search for more information, I would learn that in the mid-1800s land surveyors went out in the muck and sop to take stock of the Willamette Valley. They trudged through snowberry, ninebark, elderberry, and through crowdings of broadleaf trees. Inch by inch, they surveyed the landscape. The first maps show a majestic ribbon of water hemmed in by the spines of two mountain ranges. The channels formed an intricate lacewing pattern that flowed across a scoop of land. In some

places, the river meandered over a width of five miles.<sup>10</sup> The maps also show a river flowing through a wooded forest. These bottomlands, often two miles thick and up to seven at the confluence of major tributaries, contained Oregon ash, alder, black cottonwood, willows, Doug-fir, and bigleaf maples.<sup>11</sup>

With a complex network of sloughs, alcoves, and side channels, the Willamette provided habitat and refuge for many aquatic species. Juvenile fish could rest in the still backwaters. Caddisflies could build their pebble cases without being pummeled. The western pearlshell, a freshwater mussel that can live up to one hundred years, could feed and grow in the shallow secondary channels. Together the main corridor and off-channel areas recharged wetlands and ephemeral streams. They transported sediment and nutrients, and fed riparian vegetation. Overhanging trees offered leaves and wood to the river, providing nutrients and shelter for aquatic animals. It was a complete, beautifully designed web of water, wildlife, and land.

Early settlers and explorers called this place Eden. They spoke of prairie grass so tall that they had to use bells to keep from losing cattle.<sup>12</sup> Others described the land as a swamp with wetlands and ephemeral channels crisscrossing the land.

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<sup>10</sup> Klingeman, P. C. (1987). Proceedings from the Corvallis Symposium: *Erosion and Sedimentation in the Pacific Rim*. Corvallis, OR. Retrieved from [http://iahs.info/redbooks/a165/iahs\\_165\\_0365.pdf](http://iahs.info/redbooks/a165/iahs_165_0365.pdf)

<sup>11</sup> Payne, S. & Baker, J. (2002). Introduction: Study area. In D. Hulse, S. Gregory & J. Baker (Eds.), *Willamette River Basin atlas: Trajectories of environmental and ecological change* (2<sup>nd</sup> ed.) (pp. 2-3). Corvallis, OR: Oregon State University Press.

<sup>12</sup> Gregory, S., Ashkenas, L., Oetter, D., Minear, P., Wildman, K., Christy, . . . Alverson, E. (2002). Presettlement Vegetation ca. 1851. In D. Hulse, S. Gregory & J.

French explorer Gabriel Franchère in 1814 wrote about the Willamette's wooded banks and low swampy fields giving way to hills "rising in an amphitheatre." Peter S. Ogden, a Hudson's Bay Company trader, traveled on the river in 1826 and wrote about a bountiful land ripe for settlement:

A finer stream than the Willamette is not to be found; soil good; wood of all kinds in abundance, roots, elk, deer, salmon and sturgeon abundant; man could reside here and with but little industry enjoy every comfort. No doubt ere many years a colony will be found on the stream and I am of the opinion it will, with little care, flourish, and settlers, by having a seaport so near them, with industry, might add greatly to their comforts and to their happiness.<sup>13</sup>

I wish the story of Willamette Valley settlement were an exceptional one. That is, I wish settlers left the river alone. The history books could hail the Oregon Country colonization as an example of humans living with nature. But how could they leave the river alone when they needed it for transportation, when their subsistence depended on it? It's easy to place blame, but I probably would have rallied to tame the river had I lived during settlement.

Ogden's prediction of settlers coming to the valley proved correct, and they did not find comfort and happiness by living with the original inhabitants or accepting the dynamisms of the land. Instead, the Willamette River's story during European settlement is filled with destruction, loss, and utter hubris.

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Baker (Eds.), *Willamette River Basin atlas: Trajectories of environmental and ecological change* (2<sup>nd</sup> ed.) (pp. 38-39). Corvallis, OR: Oregon State University Press.  
<sup>13</sup> Clark, R. C. (1927). *History of the Willamette Valley, Oregon*. Chicago, IL: The S.J Clarke Publishing Company.

By the time colonizers arrived, native populations had dwindled. Smallpox first showed up in the late 1700s and came in subsequent waves. Then what the indigenous people called a “Cold Sick” (likely malaria) spread in the 1830s from Sauvie Island and Fort Vancouver, killing upwards of 90 percent of native inhabitants in some villages.<sup>14</sup> By the time of settlement, Europeans found the valley virtually unoccupied. From their height of an estimated 15,000, Kalapuya numbers had dropped to six hundred by the mid-1800s.<sup>15</sup> Another count in 1841 found only one hundred in the entire valley.<sup>16</sup> No matter the exact number, the Kalapuya people—and many of their traditions dating back thousands of years—fell victim to the settlers’ diseases more than their gunpowder. With the demise of native villages, the burning practice that had shaped the valley for two hundred years stopped. The traders and trappers, mountain men and missionaries had a new land management plan in mind.

But still the river flowed.

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<sup>14</sup> Abbot, Carl (2004). A century of change. In *The Oregon History Project*. Retrieved from <http://www.ohs.org/the-oregon-history-project/narratives/lewis-and-clark/lewis-and-clark-centennial-exposition/century-change.cfm>

<sup>15</sup> Juntunen, J. R., Dasch, M. D., & Rogers, A. B. (2005). *The world of the Kalapuya: A native people of Western Oregon*. Philomath, OR: Benton County Historical Society and Museum.

<sup>16</sup> Black, L. D. (1940). *Willamette River history: The peopling of the middle Willamette Valley*. (Unpublished doctoral dissertation). University of Michigan, Ann Arbor MI.

With little resistance from the first inhabitants, land was there for the taking—320 acres for a single man and 640 for a married one.<sup>17</sup> In a ten-year span from 1850 to 1860, the Euro-American population grew from roughly 13,000 to 52,000.<sup>18</sup>

But still the river flowed.

It was time to put the river to work, the settlers decided. Their goal was to concentrate the flow to a single channel so they could move steamboats up and down the Willamette. Beginning in the mid-1800s, the Army Corps of Engineers constructed closing dams built across the mouths of side channels. Downed trees and wood were also used to block the channels. By one account from the U.S. Army Chief of Engineers in 1875, the settlers saw no purpose for swampy, ephemeral waters that could not move steamships. He described the channel upriver of Corvallis as being “cut up into so many useless sloughs.”<sup>19</sup>

But still the river flowed.

Severing channels wasn't enough. The river needed deepening to allow passages of bigger boats, and so dredging began in 1865.<sup>20</sup> Between 1908 and 1929, the Corps dredged an average of 102,000 cubic yards of material each year. This is

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<sup>17</sup> Richey, D. (2002). Land ownership. In D. Hulse, S. Gregory & J. Baker (Eds.), *Willamette River Basin atlas: Trajectories of environmental and ecological change* (2<sup>nd</sup> Ed.) (pp. 76-77). Corvallis, OR: Oregon State University Press.

<sup>18</sup> Abbot, Carl (2004). A century of change. In *The Oregon History Project*. Retrieved from <http://www.ohs.org/the-oregon-history-project/narratives/lewis-and-clark/lewis-and-clark-centennial-exposition/century-change.cfm>

<sup>19</sup> Benner, P. A. & Sedell, J. R. (1997). Upper Willamette River landscape: A historic perspective. In A. Laenen & D.A Dunnette (Eds.), *River quality: Dynamics and restoration* (pp. 23-49). New York, NY: CRC Press, Inc.

<sup>20</sup> S. Gregory (personal communication, May 4, 2011)

equivalent to removing more than thirty Olympic-sized swimming pools of sediment every year, the same sediment the river used to build islands and gravel bars, the same sediment the salmon used to spawn.

But still the river flowed.

Excess riverbed material, called dredge spoil, was sometimes deposited where small side channels met the main river, eliminating critical off-channel habitats. The Corps also built wing dams to centralize flow into the middle of the channel. Over time, side channels would fill in or dry out. And of course people wanted to farm too. They straightened creeks to maximize tillable land. They drained wetlands and filled in the sloughs.

But still the river flowed.

Taken together, these disturbances eliminated miles and miles of river channels. The Upper Willamette (between Eugene and Albany) has undergone the most significant changes. In 1997, scientists Patricia Benner and James Sedell compared 1850s township survey plats to a late 1960s map and found that the Upper Willamette has lost between 45-50 percent of its original channel miles.<sup>21</sup> Another

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<sup>21</sup> Benner, P. A. & Sedell, J. R. (1997). Upper Willamette River landscape: A historic perspective. In A. Laenen & D.A Dunnette (Eds.), *River quality: Dynamics and restoration* (pp. 23-49). New York, NY: CRC Press, Inc.

study<sup>22</sup> found that side channels in particular along this stretch have been reduced from 120 miles in 1850, to 31 miles in 1995, a loss of almost 75 percent.

But still the river flowed.

In addition to eliminating side channels, settlers and agencies such as the Army Corps of Engineers prevented the formation of new ones by stabilizing the bank with riprap (i.e., large rocks). If a settler established his farm near the Willamette, he kept the river from meandering onto his land by fortifying the bank with rocks or snags. Between Eugene and Albany, one quarter of main channel bank has been stabilized by revetments.<sup>23</sup>

But still the river flowed. The river still flowed and still does, but not like it used to. Look at the Willamette today, and that lacewing pattern of channels doesn't exist—just the faint suggestion of them in a pattern of meander scars. Small ponds and remnant channels dash the valley, here and there.

Ecologically, scientists know to some degree what this loss means. They know eliminating side channels is detrimental to fish that need still water to survive. They know filled-in sloughs can no longer store floodwaters and dissipate the river's energy. They know a single channel concentrates the river's power and erodes the streambed to bedrock, where nothing can grow. They know the river has less

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<sup>22</sup> Oetter, D. R., Ashkenas, L. R., Gregory, S. V., & Minear, P. J. (2004). GIS methodology for characterizing historical conditions of the Willamette River flood plain, Oregon. *Transactions in GIS*, 8(3), 367-383.

<sup>23</sup> Benner, P. A. & Sedell, J. R. (1997). Upper Willamette River landscape: A historic perspective. In A. Laenen & D.A Dunnette (Eds.), *River quality: Dynamics and restoration* (pp. 23-49). New York, NY: CRC Press, Inc.

interaction with the land to bring in nutrients and wood. They know clearing trees from the riverside reduces shade and makes the water too warm for fish.

For years I've looked at the straight single channel by my home and thought it was normal, but now I know something is terribly wrong. What does it mean to live with so much loss, with only the remnant essence of something, the soft edges of a place we can only fill in by imagination and not experience? What does it mean for a society to be severed from the ways of a wild river, the habits of places no longer seen? If we don't understand what a river used to be, how can we ever find the courage to hope that it can be that way once more?

I wonder if there is another kind of loss that comes from simplifying a river, something deeper, and something the numbers and data can't tell. We cut off channels and in the process our sense of wonder and awe of the world, the mystery, the rhythms, and songs of wildness. People of the valley, including me, don't know the power of big floods, or how thick the forests can be, or how the river moves with the tempo of the rain—at least like it used to without the dams.

It's clear I cannot go back in time and prevent settlers from changing the river. I am no Wonder Woman. How, then, can I live to prevent harm in the future? What does my knowledge of the river's loss ask of me? How do I grieve for a river when I did not witness its destruction? And how can I reconcile this loss and come to a place of healing? I don't know the answers to these questions, but I know they need asking.

I have sat in my kayak among the Wapato and willow of back channels and thought about what all this loss might mean. I've seen stretches of the river choked by large rocks. I've thought about junctures and connections, the rich edges between alcove and main channel, the cottonwoods abandoned by a shrinking water table, the wetlands that once were.

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And so here I am now, thinking about the river's wonders and its wounds. The morning light finally arrives and dapples the river's surface. More bikers zip across the bridge, and the mist continues to creep down the hills and settle into the cradle of the riverbed.

It's October, the month when William Broughton first saw the Willamette more than two hundred years ago. It is the time of year when the skies fill with arrows of geese pointing to where they will land. Mayflies crouch under stone. Rain threads its way through leaf, trunk, and stem. Small rodents scurry to dark places, until the sweet grin of spring arrives. The Willamette too will rise and roil over pebble and stone, turning from green to brown like a snake shedding skin. Were the Kalapuyans here in full numbers, they might be harvesting the arrowhead-shaped plant called Wapato. They might be preparing for winter, the season of storytelling, when short days and rain keep them inside.

I am also in retreat. Like the land turning towards winter, I am moving inward, becoming still. The robin's song quiets, and so do I. I do not sing but take stock. I listen, watch, and search. I read which way the geese point to see where they will land.

## Blinking Island (The Meaning of Change)

“Time is a sort of river of passing events, and strong is its current. No sooner is a thing brought to sight than it is swept by and another takes its place, and this too will be swept away.”

—Marcus Aurelius

*Spring:*

I am late for work and pedaling fast on my bike—past the old railroad tracks and the BMX bike course, pumping hard to make the small climb to the footbridge. I make it up the hill and pass the tree where I once flushed a sharp-shinned hawk. Zipping across the bridge, I look to the right, through the metal railing and out to the Marys River as it weaves into the Willamette. I lurch to a halt and focus on the water. What is that? A flat cap of land is sitting right in the middle of the confluence—an island! I grab the rail for balance and to get a better view. From here it looks like sand, smooth and unrippled. It is small and crescent-shaped, tapering on the upstream end and bending to the river’s curve, like a peachy infant tucked against her mother.

I’ve biked by here almost every day for the last couple of years and had never noticed the island before. Was I unobservant? Do islands just sprout? Later I would read that islands form in all kinds of ways, sometimes because of high water or at confluence where the force of one river meets another. And others build up behind a

blockage like a snag. Some last a few decades, others centuries, which in the scheme of a river is not a long time.<sup>24</sup>

However this island formed and however long it will stay, I marvel that something liquid can create land. And how wonderful to see the island come up in spring, when the world is so focused on newness—robins calling for mates and garter snakes sliding out from dark places. There are seasons in the river too. I wonder what the island will be like in summer when the water pulls back even farther. Maybe killdeer will lay eggs and willows will take root. Maybe it will grow and build a side channel. Maybe shrubs and trees will make a mad dash to colonize the new landform.

I watch for another minute or two, smelling the sweet syrup of cottonwoods and listening to a song sparrow call from a place I can't see. A light spring breeze tussles the trees and carries the song sparrow's tweets and trills across the water. Then, I get on my bike and pedal as fast as I can to work.

*Summer:*

Every day I try to look at the island as I zoom past it on my bike, and every day it's the same. Except it's not. Thinking back to how it was in spring, I realize the island has grown, but I don't know how or when. It has risen like leavening bread, spreading out into doughy folds of land. Has it really grown? Or is the water just receding?

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<sup>24</sup> Osterkamp, W. R. (1998). Processes of fluvial island formation, with examples from Plum Creek, Colorado and Snake River, Idaho. *Society of Wetland Scientists*, 18(4), 530-545.

One afternoon I shove off in my kayak to visit the island, eager to see the side channel it has created. The familiar smell of wet dying things washes the air, but the river is distant and unfamiliar—swift and deliberate, with dark water hiding the world beneath the surface. Even in July, summer feels like a jagged edge between seasons, unable to decide if it's coming or going, staying for good or just passing through.

At every turn, I flush some winged creature—a kingfisher that voices his annoyance with a clipped rattle. In the willows, a buzzard eating a decaying fish cuts into the air with saw-tooth wings.

The seasons can bring swiftness or sluggishness. Sometimes current brings me to a place sooner than expected, and other times paddling full tilt won't get me there soon enough. Time moves at a different pace on water than on land. Which is why I almost pass the island, sure that I wouldn't get to it for another ten minutes. But ten minutes means something different on a river.

Up close, I see the island is not made of sand, but of stones the size of golf balls. By the shore, once-slick algae have hardened into a mucus crust. The rocks are not buff at all. They are the milky blue of an overcast day. At first the island looks barren and sun-baked. But when I get out of my kayak to look around, I see small sprigs of willows pushing through. Other things I can't identify are trying to grow. How can something grow through a surface made of stone?

*Fall:*

The island is unrecognizable. I stopped looking at it for a while and it became something different. Bursting with willows. Tangled and messy. Crowded with green. Full and fleshy. What did it even look like before? I don't know. But I like the fallen cottonwood leaves speckling its surface.

One time on my way home from work, I watched the island from the footbridge. Near the edge, water splattered the reflected moon, so carefree that I thought the silver light would splash on the island and take root. And yet another time, fall mist hugged the land so tightly that everything disappeared behind a veil of white. Even within the season, the island changed.

In October, I paddle out to the island to look at it up close. The trip is my goodbye to kayaking for the season and a welcoming of fall. I paddle through the mist until I reach the island. Indeed it has changed. I don't flush out buzzards or kingfishers but instead hear the haunted echo of geese flying above. The island is smaller, its flanks already eaten by the rising water. The leaves of submerged willows flutter near the edge. Shrubs and weeds crowd the rocks, now covered with rain, river, and algae. The stones are no longer milky blue. They are the color of fall—rusty brown, grey, and brick red.

*Winter:*

It is winter. On my way home from work, I stop to look at the island under a crest of moonlight. The night comes so quickly now. The island is gone—swallowed by water or pushed away by torrent flow—and much of the plant life has drowned. All that remain are the bony silhouettes of willow twigs reaching above the swollen river. The stones must be slicked with algae and dead things, or maybe some have been carried off by the high water. The mayfly larvae might be hunched in underwater crevices right now, conserving what they can during winter's low light. I can only imagine from this far away, and under this dark a sky.

Standing out here, the world seems still. The force that grows and tumbles mountains goes unnoticed by my eyes, and yet the world turns, spinning our days and death with the certainty and creativity of moonrise. The fawn lilies burst from the ground and then die, rising and falling like breath. Salmon return to spawn and die in a dance played out for millennia, and underneath the most un-telling of skies, an island blinks out of sight under the Willamette's dark waters.

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I watched the island for a year. I saw it emerge from the water, grow, establish plants, and then sink underwater. No sooner was the thing brought to sight then it slipped away. What will take its place, I don't know. And how long it had been rising and falling, I also don't know. If I could somehow pull back and see the force that kills and

ushers in new life, then maybe I can learn to accept a world always tipping in a new direction.

At times, the change seemed quick, as if one day the island swelled out into the middle of the channel. Other times, I thought I imagined the change, or the island only became something different once I looked away.

Fast or slow, the island was in a constant state of becoming, even if that meant becoming nothing. The river seemed indifferent to this becoming—piling up rocks and then raking them away in a blink. Why should I love or long for anything, then, if it will just be taken away?

But I know change isn't only about the drowning of islands, creation slouching toward an inevitable end, the flicker of things escaping to a dark sky. Loss is only a part of it. I know this because I saw the island rise, too, and there is more to the world than despair.

Even so, there must be some lesson in loss—maybe it's appreciation. But appreciation isn't strong enough a word. Maybe what I mean to say is loss teaches us how to care. Caring that comes from the shared impermanence of all things, from the surge of water and scatter of stones. Would we live so fully without things being swept away?

I also know that change isn't just about loss because that same also brings renewal. A river erodes, but it also accretes, building up stones to create new edges and islands. It floods and wipes things out, but in that process, it also renews life. It

builds new channels that have temperatures and flow rates different from the main corridor. And complexity brings an abundance of life. Isn't it a wonder that a single river can be home to microscopic rotifers and seven-foot sturgeon? That it can be so many things and changing all the time? I would call one stretch Place Where Wapato Blooms, another, Tangled Snags, and another, Quiet Green Pool. At a different time of year, I might call these same places Drowned Arrowheads, Washed Out Logjam, and Noisy Brown Pool.

The river creates complexity, and therefore creates. So change is also about renewal. Could loss and renewal, then, be two sides of the same thing, not opposing but complementary forces? If that is true, then maybe our own destructive acts can have a side of renewal to them. Maybe even in harm we have a chance to rebuild.

Whatever change is about, I fear sometimes we don't notice it—not just how the land changes, but how we change it. We sense time differently than a river. We simplified the Willamette in 150 years, which might seem like a long time to a human. After all, it's worth two average lifetimes, several thirty-year careers, and dozens of political terms.<sup>25</sup> But to a river, 150 years is just a moment's passing, a geological blink.

I watched an island grow and disappear, but I know there used to be more of these landforms coming and going before so many people were here. Since 1850, total island area has decreased by 80 percent in the section of river between Eugene and

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<sup>25</sup> J. Sanches (personal communication, August 29, 2010)

Albany.<sup>26</sup> Fewer islands mean fewer places for shorebirds to live, or for deer to take refuge from predators lurking in the woods. But do we notice these changes?

People might be too short-lived to understand gradual ecological losses. We lose another salmon run. Another field gets bulldozed. Another channel fills in. Another beaver gets displaced.

Chris Maser, a scientist and writer, calls our inability to understand the landscape's incremental changes the invisible present:

Only unusual people can sense, with any degree of precision, the changes that occur over the decades of their lives," he writes. "At this scale of time we tend to think of the world as being in some sort of steady state (with the exception of technology), and we typically underestimate the degree to which change has occurred."<sup>27</sup>

We'll never live as long as a river—that much is clear. But maybe in the relatively short time we have on this planet, we can live with less urgency, until we understand and perceive, and our false senses of disturbance and time allow us to acknowledge what we are losing and what we have gained. Maybe life shouldn't be measured just by its distance but its depth, those quiet places that stir less anxiously, those eddies of the mind that turn and turn again, allowing us to come back around to a place in the world or a place in our mind. Deep places offer a stillness to see beyond our own finality.

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<sup>26</sup> Oetter, D. R., Ashkenas, L. R., Gregory, S. V., & Minear, P. J. (2004). GIS methodology for characterizing historical conditions of the Willamette River flood plain, Oregon. *Transactions in GIS*, 8(3), 367-383.

<sup>27</sup> Maser, C. (2009). *Earth in our care: Ecology, economy, and sustainability*. Piscataway, NJ: Rutgers University Press.

I'd like to design an experiment that slows down our minds. Maybe participants would sit all day or a whole week and watch a river. With the stillness of a heron, we would record every leaf fall and wing flutter. We would watch forms shape-shift underneath the surface, taunting our senses and bending our perception of slow and fast. By the study's end, we would see the immensity of changes that happen even in a short period. We might understand the world is longer than our own lives, and perhaps by extension, we could begin to feel the earth move.

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During the year I watched the island, I spoke to Kim Carson with the Freshwater Trust. At the time, I was awash in confusion of what all this change might mean and how to notice losses in the natural world. With her long black hair and crystal blue eyes, she said the most beautiful simple thing about learning to move slowly and appreciate the small and unadorned things of places. She said exactly what I wanted to hear.

Just like the river, we have channelized our thinking. And by channelizing our thinking, we lose touch with the subtleties and the complexities of the world; we lose touch with diversity around us; we become too confident, and we move too quickly. It's like the water—if it moves too quickly, it flushes out substrate. We need to slow down and figure out how rivers work. We figure out the river, we figure out ourselves.<sup>28</sup>

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<sup>28</sup> K. Carson (personal communication, June 14, 2010)

### Shards of Beauty in a Fragmented Landscape

There are at least two ways to get in a kayak. If you have the guts and grace of my husband, you will grab the lip of the cockpit, nose the prow into the water, and kick off into the current without a splash. If you are like me, you will read books on how to use your paddle as a balancing device and practice on dry land before hitting the water. And you will still get wet.

The summer after my first year of graduate school, I had plenty of practice getting in my kayak. We paddled the John Day, Deschutes, Anthony Lakes, and Wallowa Lake. But more than any other place, we paddled the Upper Willamette River. If it was a weekday, I'd watch the clock at work, making sure I wasn't there an unnecessary minute, and dash home so we could do the trip before dark. Once home, we'd gather our gear without saying a word to each other. No time for conversation. Then, we'd throw everything in, make sure our dogs had plenty of water, and whisk out of the house. We could do the ten-mile Peoria to Corvallis stretch in a little under three hours and with enough light to find our way home.

On the drive out to our first trip on the Willamette for summer, we saw gentle winds carry the fluff of cottonwoods like snowdrifts. Summers here are pleasant dreams after a long spell of restless sleep. The rain stops, and people trade wool socks for sandals. They put away long johns, waterproof jackets, and wool hats. During this time of warmth, full of swallows and the chatter of western tanagers, the air carries the

distinct essence of the valley: flat fertile fields, and beyond that, tree-stitched hills, ridgeline after ridgeline, and sunsets that lap the sea with an incandescent glow. This flash of beauty charges our batteries for the drudgery of rain and darkness during the rest of the year, and for this reason, no people may appreciate sunshine more than western Oregonians.

No matter how much I hustle to the water, Ben's always in his kayak first. This time, he was doing figure eights in the shallow slack waters of the put-in spot. Meanwhile, I was in the car fumbling with keys, stashing my purse under the seat, and trying to skitter out so Ben couldn't tease me for being slow. My first time back on the Willamette for the season, I had to re-acquaint myself with the water after being away from it for so long. I felt awkward and tippy, and my arms burned trying to stay straight and keep up with Ben, who seemed calm as ever picking at his cuticles while waiting for me.

Floating rivers—even large ones like the Willamette—requires reading the water. Not everything can be planned, and what can't requires a mix of reaction and correction, which is likely more intuited than instructed. I'm fascinated by white-water guides who know how many forward strokes it takes to skid around a rock. But even the most practiced paddlers have to rely on split-second reactions. This is an important lesson to remember for a planner like me.

Ben has a natural way of reading a river. He knows to hang on to the outside bank and catch the fast flow—something I had to figure out in a textbook. Sometimes,

I'd be huffing and paddling red-faced to keep up, while Ben was letting the river do the work for him. My logical brain, which doesn't shut off even when contradicted, thinks the inside curve is the shortest path, and I'll be damned if it's the slowest.

Once you learn to read a river, you find it has a way of reading you.

Personalities float up and become accentuated, in the same way water magnifies stones beneath its surface. The water reflects back your image, but not in exact form. What you see appears dimly familiar, but somehow changed, larger, and fuller than you imaged, and in that regard, a river can show us our essence. Already prone to lingering, the Willamette brings out my inner slow poke. I love to loiter while paddling. I'm easily distracted by alcoves and islands, sifting through shells and rock by the shore.

If you get on a river enough, the self you've come to know on the water spills into your daily life. Rather than sudden or absolute, the process is like the slow erosion of water cutting a new and un-traveled channel. After many times on the water, I'd find myself chasing bird calls or watching newly hatched black flies sit still longer than even my patience could withstand.

But reading a river isn't always enough—at least not for me. You have to learn the dual art of reading and watching, seeing without looking. You have to sense. You have to learn to keep your head forward and scan for fallen tree trunks but always watch your periphery. If you don't, you risk missing a flash of feather or thrash of a

heron—shards of beauty that are more an outcome of patience and perception than actual looking.

As Ben and I paddled by Peoria, I noticed the houses—oversized boxes, each with big windows to frame an arresting view of the river. That’s all Peoria really is—a few scattered houses. But 130 years ago, the town was an altogether different place. Named after a city with the same name in Illinois, Peoria was a bustling port town with four grain houses on the river bank. The river was channelized so steamboats could ship goods up and down the river. Peoria was at the center of it until the advent of the railway, when Oregon and California Rail bypassed the town in favor of Halsey and Shedd. By 1900, the post office had closed along with Peoria’s legacy.<sup>29</sup> Today all that remain are these few scattered houses surrounded by a thin buffer of trees.

Downriver a few miles from Peoria, I decided to cut over and take a side channel that I knew connected back to the main corridor. From the far shore Ben maneuvered to follow, then shot ahead. Suddenly we were tucked inside tall walls of red osier dogwood and willows.

One hundred and fifty years ago, side channels like these crisscrossed the valley floor. I read that an Army Corps shoal pilot in the late 1800s had never run the same course twice in two years along a fourteen-mile stretch of the Upper

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<sup>29</sup> McArthur, L. A. (2003). *Oregon geographic names* (7<sup>th</sup> ed.). Seattle, WA: University of Washington Press.

Willamette.<sup>30</sup> Imagine in two years' time still not seeing the full picture of a river. Imagine that many more eagle nests, and beaver, that many more water strider, chub, salmon, and heron. As I paddled through the side channel, I wondered: *What did this place look like before settlement?* All I had was this fragment of what the river used to be.

Emerging from the side channel, I saw something flicker by the shore. A brown furry animal slid out of the water and waddled onto the land with a flat, waffle iron tail hitching from side to side. The late sun lit up his honey-brown fur. American Beaver.

Guidebooks will tell you that beaver are common along the Willamette River, but not like they used to be. French Canadian fur trappers and enterprises like the British-backed Hudson's Bay Company nearly extirpated these large rodents in the late 1700s and early 1800s, which simplified off-channel areas. When beavers build dams, they backfill channels and create complex features such as pools, which attract rearing fish and osprey. Because of their ability to benefit other wildlife, beaver are often referred to as keystone species. Over-trapping eliminated many of these pools and likely affected other species that use these pools for habitat.

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<sup>30</sup> Benner, P. A. & Sedell, J. R. (1997). Upper Willamette River landscape: A historic perspective. In A. Laenen & D.A Dunnette (Eds.), *River quality: Dynamics and restoration* (pp. 23-49). New York, NY: CRC Press, Inc.

When you read about the fur industry in Oregon, it's amazing that trappers were able to reduce beaver numbers at all. As the Oregon Historical Society<sup>31</sup> explains in detail, trappers mostly worked in the winter, when beaver coats were thickest. This meant they had to wade swift and freezing streams to set traps with a short chain under water. They would anchor the chain to a stake tall enough to stand above the surface, and then smother the stake with castoreum oil from the musk gland of an already-culled beaver. Attracted to the castoreum oil, an unlucky beaver would set off the trigger, get its foot caught in the trap, and then instinctually swim to deep waters seeking shelter. But with the trap's short chain anchored firmly to the stake, the beaver would either drown or die from exhaustion. This method ensured a flawless pelt. Competition was stiff among trapping outfits, so workers would catch all the beaver in the area and leave nothing for rival companies.

I watched the beaver scuttle into a willow thicket before paddling toward Ben, who had slowed to wait for me. Faster than I could tell him about the incident he said, "I think I just saw a beaver."

"I think I did too."

It was the first time either of us had seen a beaver in the wild.

Seeing the unexpected reminded me that the world offers us small gifts through glances, whether a side channel or beaver. These glances, like shards of a

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<sup>31</sup> Binus, J. (2004). Beaver trap. In *The Oregon History Project*. Retrieved from [http://www.ohs.org/education/oregonhistory/historical\\_records/dspDocument.cfm?doc\\_ID=66620F05-0E60-BE11-791565100325BC72](http://www.ohs.org/education/oregonhistory/historical_records/dspDocument.cfm?doc_ID=66620F05-0E60-BE11-791565100325BC72)

broken world, reflect a place and time of wholeness. With enough practice, it becomes difficult to ignore these small bits of beauty, like the white rump of a flicker in flight, or its harsh singular call that knifes its way through the morning air. Glances like the sharp-shinned hawk when it stoops and shows mottled wings, speckled light cast through fir needles, or dew hung like silver jewels on trees. Or mornings just before spring, when sunlight dimples the water and makes the river look metallic, a spray of silver so bright that my eyes water, both from emotion and dazzling light. Or when trees spear new buds into frayed air, even when an unexpected cold could snap them back to sleep. Pure gladness moves over my body when the earth pulls back and shows its beauty.

I have seen shards of beauty on the Willamette River when I was convinced it could only offer loss and brokenness. A couple miles downriver from our beaver sighting, Ben and I passed one of my favorite sit spots on a rocky shore. I sat here once in the company of five tundra swans visiting for the winter. At the time, I thought of James Clyman, a mountain man and early explorer of Oregon, who described his Willamette Valley sojourns in a journal. Near the Willamette River, he told of a sky almost blackened by water birds:

For miles the air seemed to be darkened with the emmène flights that arose as I proceeded up the vally the morning being still thier nois was tumultuous and grand the hoarse shrieks of the Heron intermingled with the Symphonic Swan the fine treble of the Brant answered by the strong Bass of the goose with ennumerable shrieking and Quacking of the large and Smaller duck tribe filled every evenue of Surrounding space with nois and reminded one of Some aerial battle as discribed by

Milton and all though I had been on the grand pass of waterfowl on the Illinois River it will not begin to bear a comparison with this thier being probably Half a Million in sight at one time and all apparently Screaming & Screeching at once.<sup>32</sup>

Clyman's time was one of newness and bounty. Lands were wild, and life balanced between fate and grace. But even the harsh mountain man, heavy with the trappings of the frontier worldview, were on the receding limb of wildness. In their wandering and pursuit of the unknown, they blazed a trail for the masses to come and alter the lands these rugged individuals had come to understand. The skies of the Willamette could not be forever blackened by birds, and Clyman may have never known the irony of his travels.

I sat for a while on that rocky shore, thinking of Clyman, until all five swans took flight at once. Instead of the shrieking clamor of half a million birds, the air carried only the quiet whistle of wings cutting across the sky. Even this small sound was beautiful.

In the same way our eyes adjust to darkness and begin to discern shapes that were cloaked only moments ago, seeing on the river is a process of slow revelation. After we saw a beaver emerge from the water, Ben and I kept spotting other wild things. We

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<sup>32</sup> Camp, C. L. (Ed.). (1960). *James Clyman, frontiersman; the adventures of a trapper and covered-wagon emigrant as told in his own reminiscences and diaries*. Champoeg, OR: The Champoeg Press.

pulled over to a gravel bar to watch two bald eagles hunting as a team. I've heard this is somewhat rare, since bald eagles are more scavengers than hunters. But, they are also opportunists and will hunt if necessary. We watched the eagles flush a swarm of black birds from a row of tall cottonwoods. First, a shifting, dark cloud of wing and beak swarmed the sky, an avian tempest stirred by one eagle. Then there was the thunder clap dive of the other, the clutch of something dark in its grasp, and finally, the dance of feathers circling like a waltz in the silent air. All I could do was gasp at the sight.

What kind of world is this, that offers pieces of dazzling beauty so willingly? That offers gifts even when we dishonor them with destruction? Surely it is not a place of pure loss and sorrow. And if the world is something more, then how should I acknowledge what it offers? I could ignore the gift or become lost in despair. Or, I could honor it with gratitude, joy, exaltation, reverence, and—I'll just say it—love.

Some will call me sentimental to love a fragmented world, but I'm okay with that. The word sentimental comes from the Latin root *sentire* (to feel), which is closely related to the word, *sense*. Besides meaning perception or feeling, sense has pre-indo-European roots meaning to go, travel, or strive after. Being sentimental means searching for the small reminders of what the world once offered—free and wild rivers overflowing with beaver, tundra swans, and eagles. It means we pay attention and watch. It means we feel and sense loss, but also look for the shards of what's left. Living only in loss blinds us to the remaining beauty. For this reason, I am stowing up

these shards one at a time. I'll scavenge riverbeds for pieces of shell and rock until I'm worn from searching, until I have a mosaic of the world in wholeness.

On the gravel bar, Ben and I stood as the evening light poured behind the coastal mountains and the eagles went to roost. Near the shore, I trailed my fingers through river rock, and at first, all I felt was stone. But given time, the monotonous swath of stones became all kinds of colors—lavender purple, moss green, and sandy brown. Between rock crevices were small pieces of killdeer egg and broken pearlescent shells. One by one, I picked up these treasures and showed them to Ben, who smiled at my fascination. I think of my mother, her pockets always full of chipped shells and rocks after visiting the beach. She keeps these treasures in a small bowl above her windowsill.

“You ready?” Ben finally asked softly.

“I guess so,” I said, knowing I could stay until dark.

But it was okay because the dogs needed love and we needed dinner—I was content to let this shard of beauty go.

Back on the river, the current whispered against our kayaks. The evening wind roused the trees and brushed against our cheeks. Despite the darkness washing over the river, Ben slowed to meet my pace. We paddled the final mile side-by-side, the twin trails of our kayaks nearly touching.

## The Many Truths a River Tells

*On the water: Old Eastern Channel, Corvallis, Oregon*

The two of us are paddling the Willamette. The earth is dry from the sun's whisper, and a glow that feels not quite like fall casts light on the wings of a thousand midges. It's the end of the day, the time when dark shapes come out and scurry among the deadfall along the shore. Slinky-framed minks crawl hurriedly yet without sound. Then suddenly, twigs snap. Leaves crunch. A towhee scratching leaf litter beneath a dense snarl of shrubs? Or something else?

We sit in our kayaks with the hard plastic hull separating the soft of the water and soft of our thighs. I am concentrating on the feel of water almost on my skin, the river's cool susurrations murmuring against our boats, a sensation felt more deeply with each experience. The first time I kayaked as an adolescent on the Deschutes River in central Oregon, the feeling of being *on* the water redrew part of the world for me. It became a new way to know a river. I was no longer observer, but participant, and as a participant, I experienced a truth that was before unknown. On the water you become part of the river's course, its pace, and its will. If the river is in a hurry, then so are you. You arrive at the time the current intends, and there is comfort in this.

Since my first time on the water, the picture has been redrawn over and over with the ink of both new and familiar rivers. Each experience became a new line, an unknown channel forming something real. Given time, these threads of experience on

the water have become more complex, connecting in a dendritic pattern not unlike a river itself.

Today the river dallies. And being on the water, we accept it. We are kayaking the old eastern channel near Corvallis, which bustled with activity and trade during settlement as the river's once-main course. The channel used to snake upstream of Corvallis in a distinctive "S," with the outside of the upriver curve cutting away each year. Corvallis residents were terrified that the river would cut away to the east and bypass our budding township. This would spell sure death for a river port town with grain mills and landings abutting the water.<sup>33</sup>

To keep the river in place, the Army Corps armored the bank in the late 1800s with wood pylons and rock, called a revetment. River ecologist and historian Patricia Benner told me that you can still see remnants of this historical structure—one of the Army Corps' early attempt to stabilize the bank on the mainstem Willamette.<sup>34</sup> She showed me a picture of the Army Corps installing the revetment. Men with wheelbarrows were hauling material to the site. Even then, the trees near the bank were mostly gone. Patricia showed me another photo of the steamer *Eugene* traveling down this eastern channel in 1899 with wood pylons from the revetment in the foreground.

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<sup>33</sup> Benner, P. (2009). *The Willamette River near Corvallis: River history & ecology*. Corvallis, OR.

<sup>34</sup> P. Benner (personal communication, May 11, 2010)

I've been tempted to blame the Army Corps and settlers who made this river something so different than what it used to be. But my distaste for this time in history doesn't make it untrue. What is written in the history books cannot be undone. Commerce drove townships. People flocked with hopes of striking it rich, making a name, and staking a piece of land. Commerce was gospel. Commerce was truth.

So, the revetment was installed and the Willamette never broke away, but around the year 1900 the river did change course. Eventually, the Willamette formed a new channel, and the eastern branch was no longer the mainstem. Over time, and with less water flowing into it, the eastern channel became a sluggish, narrowed passage.

I tell Ben this story as we struggle to paddle up the lower end of the stagnant stretch. Like always, he responds with imperceptible nods and small *hmmms*. Ben likes to think about things before saying anything back.

We dodge old stumps and logs while shimmying through narrow and overgrown passages. Neither of us can believe that mammoth steamboats once navigated these waters. Now the channel is maybe half its former width with bigleaf maple, red osier dogwood, and willows hunching over the water.

With only a band of mallards keeping us company, I start to feel as though we're the only humans to pass through here. For a moment I suspend the fact that the old eastern channel has been straight-jacketed and cinched. Just for a moment I let fantasy run barefoot in my mind and pretend we've stumbled upon a place unknown to any other human being. I imagine the river's story as it should be in my mind, the truth

before settlement. Giant trees stoop lazily over the water. The river widens and surges while bald eagles fly overhead.

Ben and I are not the first to travel the old eastern channel, of course, which becomes clear when I see crumbling concrete in the water and trash stranded and waterlogged by the shore. Being on the water like this, you see the reality of a river up close, even the reality of our refuse and waste. The eastern channel as a bustling water thoroughfare may not be true anymore, but the mark of humans is still here.

I make a list of every human artifact we come across.

*Catalog of Crap I Saw on the Old Eastern Channel:*

*Abandoned sleeping bag*

*Floating camping chair*

*Moss-covered tire*

*Ice cube tray*

*Old pipe*

*Rusted beer cans (Busch Light)*

Soon we come to an even bigger and more imposing human artifact: the remnants of the late-1800s revetment project. The wood pylons stand like old bastions of the river, lasting symbols of manifest destiny, the veracity of progress that was etched into most every man's heart at the time. But now, grass grows on top and in the

recesses. The pylons are gnarled and hunched, like once-noble guards hardly able to stay above the water. Both of us slow our kayaks and look at the pylons in silence.

Early residents were so afraid of losing the Willamette as a highway that they kept it still. Except doing so had big ecological consequences. Bank armoring disconnects the river from the land and prevents it from migrating and forming new channels and gravel bars. Cottonwoods especially like to take root on newly exposed soils,<sup>35</sup> so revetments also affect vegetation patterns. Bank armoring sends the river's erosive energy downstream, causing the next landowner to riprap his bank. Sometimes it evens out the speed of the river, which can be harmful to juvenile salmon because they use different rates of flow to rear and feed depending on their size. A bigger fish might use fast water to bring in food that drifts downstream, whereas a smaller fish might not be able to handle the swift current.

But more than that, revetments cause the water to reflect something that wasn't there before. The story the river tells changes.

Seeing the revetment jabs my expectations of what a river should be. I am unable to hold this stillness in front of me.

Ben breaks our silence. "All of this," he says, using his paddle to gesture to the revetment structure, "just shows that we thought the river was ours. We put all this time, money, and resources into making the river how we wanted it. And now it's one

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<sup>35</sup> Dykaar, B. B. & Wigington JR., P. J. (2000). Floodplain formation and cottonwood colonization patterns on the Willamette River, Oregon, USA. *Environmental Management*, 25(1), 87-104.

hundred years later, and most people hardly know this channel exists. The channel has changed that much in a little over a human lifetime.” Ben’s right. The reality and story of a river shifts and stirs, depending on the season, the year, or the mindset of surrounding people.

On our way back out the eastern channel, I think about what it will look like in another human lifetime, maybe closing off or becoming the main channel again. Even the pylons, sleeping bag, and Busch Light cans will get swept away by the forces of time. There are a thousand different ways it could play out. Being on the river makes it easier to imagine what the river has been and where it might go, the future reality it might reflect. I think about the next people to visit the channel and how they might feel like the only ones to pass through here. I hope instead of trash and pylons, they believe more fully in the truth of willows and mallards. I hope they enjoy the sinking sun warming their backs.

As on many trips before, Ben and I paddle to our takeout spot. We load dripping kayaks onto the car and pack up life jackets and paddles. The coolness of water will soon leave our skin, the river will wash away any trace of our travels, but we will not leave this place unchanged.

*In the water: Summit Creek, near Crescent Lake, Oregon*

We leave the flattop valley for the mountains. It’s just my brother-in-law, Jeff, and me. For miles, Doug-firs, hemlocks, and cedars vault the sky, growing on peaks that

seem to have no base. Then, moist duff gives way to sandstone and volcanic rock, brittle ponderosa pines and the scent of sage. If sight isn't a good enough indicator of the High Cascades, then the feeling of your skin can be. Dryness licks your knuckles, turning them white.

We came to survey Summit Creek, a small stitch of water at the crest of the Cascade Mountains near Crescent Lake. My brother-in-law reminded me that the Willamette River isn't just the mainstem in the valley—there is a whole network of creeks like Summit in the 12,000-square-mile basin that eventually end up in the Willamette River. We call them by different names, but together these creeks are all connected. Why not expand my vantage and explore a creek I had never been to?

For a number of years, Jeff has worked with the Aquatic Riparian Effectiveness Monitoring Program that sends crews out to survey stream quality, among other things. Interns and vagabonds, naturalists and outdoor addicts mostly in their early twenties come from all over to work for the program, some from Texas, Pennsylvania, Virginia, and Massachusetts. They bring funny accents and stories of strange places, but they share a common love for rivers. Most have never seen Oregon, and some decide to stay once they experience a place that seems to have it all: cold streams, mountains, beaches, wet forests, alpine prairies, skyscrapers, and desert.

On this particular outing, I will spend two days helping a crew map Summit Creek, count pieces of wood in the stream, plot pools and riffles, measure rocks and

cobble, collect aquatic insects, survey water temperature and chemistry, and gather a host of other data. I have never interacted with a stream in this way.

When Jeff and I arrive, we gear up from the cab of the Forest Service truck. I put on booties and felt-bottomed boots three sizes too big. The felt will help me stay balanced while walking through algae-slicked river rocks. Jeff hands me a box with a net folded in it. “Is this for catching insects?” I ask. “No, it’s to go over your face,” he answered.

Jeff had warned me about the mosquitoes, but I had no idea how bad they would be. A constant whine stipples the soundscape, and at any given moment, several dozen of these bloodsuckers swarm my face. Even in the heat of summer, I wear long pants, a jacket, and gloves as a bug barrier. Anytime I lean over and show a crescent of skin on my lower back, a dozen mosquitoes plant themselves and suck hurriedly before I swat them away. By day’s end, I will have thirty bites on my lower back alone.

Feeling and looking like a bug-proof Bigfoot, I head down to meet the crew surveying Summit Creek. Turns out they all look like me. The work precludes fashion. I tell the crew how little I know about the science behind streams—one of those things self-conscious people do to evade high standards. Everyone assures me they were just as awkward when they first started surveying streams. Somehow, their assurance feels more like platitudes, or worse, pity.

The first day I spend learning a new language—the rapid-fire volley of clipped phrases, numbers, and codes. My head swims. After some time, I learn that L-wet stands for left wetted edge, doing fines means searching for fine particles in a pool, and the word *shadooski* is not a hazing tactic but jargon for an instrument that measures shade.

My first task is to measure rocks at various points along the creek's bankfull width. Bankfull, as the name implies, is when enough water fills the active channel. This is a river's most erosive state. Ironically, flood control dams often keep a river at bankfull longer than under natural conditions; Consequently, our attempts to minimize a river's power may actually be increasing it.

As I come to find out, bankfull width can be estimated by different indicators, such as a bench or indentation where the water has scoured and eroded the land. Silt from the riverbed may also be present on nearby leaves, left from when the water carried sediment and dispersed it. Vegetation lines aren't always a good indicator, since willows, for example, can grow underwater and within the bankfull width. My job is to divide the bankfull width into five sections and then randomly select and measure the length of one stone within each of those five sections. I do this for eleven transects. That means I measure fifty-five different stones. Sometimes I grab boulders or large rocks, other times pebbles only 10 cm across. When the substrate is too small to measure, I simply record what it is: sand, clay, or duff.

My attempt at playing scientist is full of awkward moments, apologies, and re-dos. I'd lose count and only measure four substrates. Then I would forget the measurements and have to start over.

Luckily, I get to move on and use a net to survey macro-invertebrates, a word that comes from *macro*, meaning large, and *invertebrates*, meaning organisms without backbones. Certain macros like caddisflies, mayflies, and stoneflies can be good indicators of stream quality since they are particularly sensitive to disturbance. Any macros we survey here will be jarred up and sent to a lab for identification and analysis.

Standing above a Tupperware container of our macro-invertebrates, I swat a mosquito whose lifeless body pirouettes into our sample. "You've just contaminated the whole thing," says the crew leader, his face stone cold. *What have I done?* Embarrassment wipes the color from my face. Before I can mutter an apology, the crew leader breaks into a smile. "Nah I'm just kidding," he says, and starts laughing. Being a naïve newbie, I suppose I deserve a little ribbing.

My body relaxes when Jeff tells me we are done. Between the bug bites and constant effort to feign comfort, I am ready for dry clothes and a good meal.

We set up camp along the edge of Crescent Lake. The night is full of card games, bored pauses, and stories of big fish aggrandized by the magnifying lens of memory. The crew members commiserate about a massive stream-surveying site with roiling water. But recalling the experience brings out smiles and laughter. Somehow,

our relived experiences play back softer than the first time around. Given time, a river polishes stones, and in the current of our lived narrative, we polish memories. Maybe this is a coping mechanism, so that by our last breath, we are a riverbed of smooth, wonderful memories reflecting light.

One by one, each of the five crew members pulls up a camping chair to face Crescent Lake as it sizzles against pumice rock. Flanking the far shore is Diamond Peak wearing a veil of orange sky. All of us sit and watch the water for a long time without saying anything. Sitting. Staring. Unblinking. I think about the crew members—young people working for low wages, missing families and familiar smells, all to be in Oregon's streams. Not just on them, but *in* them. What does the world look like to them, being so close to stream after stream, studying and learning the science of them? What pathways and channels had these people traveled? What lessons had rivers taught them? And how has their sight been changed and complexified? Was this the way to know a river? To study and walk it? To feel the water touching my skin rather than the suggestion of it through a kayak? Was this a river's truth?

Finally, I ask, "What is it about water that calls to humans?"

One crew member, a girl from Texas with a feather woven in her hair, smiles. In a voice as poetic and soft as a stream, she says water connects all living things. We need it to survive and at the very least, we can honor it with reverence. Her response

wasn't unlike forester and naturalist Viktor Schauberger,<sup>36</sup> who believed that water was alive and therefore demanded our utmost respect.

The sun splashes across the sky in colors that change with each of my breaths. First marmalade orange, then bruised purple, then layers of color like sandstone. But instead of in the time span of ages, the wind erodes the sky in seconds. Everyone brings out a camera and takes dozens of photos, each one swearing they will take no more, that is, until the sky changes again and becomes something too irresistible to ignore. More photos accompany more stares and sighs. We can't get enough of the moving sky muddled in the lake's reflection. We don't ration or savor its magnificence but drink it in big gulps, trying to find the edge of beauty and discovering there is none.

The sound of jet skis and motorboats awakes me. *Ugh*. I let sleep douse me again for a bit, until the loud wheeze of a crew member's tent zipper breaks my dream. Not wanting to be the last one up, I stumble out of my tent and prepare for the day.

After a quick breakfast of apple and peanut butter on a bagel, I head back with the crew to Summit Creek, but slightly west of yesterday's site. First I shadow Jeff as he maps the stream channel with a laser rangefinder and electronic compass. The rangefinder shoots a laser beam to determine the distance between two points. Jeff stands with the laser, while another person some distance upstream holds a prism that

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<sup>36</sup>Alexandersson, O. (2002). *Living water: Viktor Schauberger and the secrets of natural energy* (2<sup>nd</sup> ed.). Green Forest, AR: Newleaf Publishing Group.

“catches” the laser beam. The two measure the distance between several points until they have a profile of the stream, including bankfull width, sinuosity (or how much the river curves), slope, etc. The technique allows the crew to “draw” a picture of the stream, one point at a time.

The task is too technical for me, so I join two other crew members who are searching for amphibians and invasive species, as well as measuring shade with the *shadooski*.

Turns out I am pretty good at finding frogs, both Cascades and chorus. During one amphibian sweep, I search the riverside shrubs behind the girl with a feather in her hair. Sweeping aside a curtain of brush, I see a Cascades frog sitting rock still. “Good eye,” the girl says. “I walked right by him.” I smile, both inside and out.

I spend the rest of the day in the stream, knee-deep in water cresting over boulders and slowing in pools. I see frogs and insects under water and feel the soft duff and dirt of the land. I touch and feel. The river soaks through my clothes and into my skin. For two whole days, I live *in* a stream, closer to water than I have ever been. I don’t see trash and pylons, but bugs and frogs. I am not separated by a kayak but slugging against current, walking over stone, and feeling the water pucker my skin.

When the day is over, all our data, numbers, descriptors, and samples will be sent to different scientists, analyzed, and later churned into a report that gives each stream a score. Points will be plotted. Graphs will be drawn. And conclusions will be made in the passive voice befitting of scientific analysis. But I can’t help but feel that

the work we are doing, the work these people do all summer long, serves a higher purpose. Between mosquito swats and laughs, we are finding the place where strain meets joy, that transect of two lines coming together and forming a center, a place of truth that was before unknown. We are plotting one more point in our vision of the world and learning another way of the river—what it means to be in it. Given time, these points and lines might suggest a pattern, some inferred picture of a stream I had never walked in before, a place unfolding from darkness one felt-bottomed boot-step at a time. I understand it now. Maybe just a little. It's the mystery of the next point, the lines and edges that connect and become something more, that keep these people so close to streams yet so far from home.

*Under the water: Gravel bar, Corvallis, Oregon*

A few weeks ago, I asked my neighbor, Jeremy, to show me how to snorkel a river. Besides living around the corner from me, he is a professional underwater photographer and filmmaker. His nonprofit, Freshwaters Illustrated, has made extraordinary films to teach people about the life, study, and conservation of freshwater ecosystems.

On a warm day in mid-August, when the river becomes shallow and slow moving, I grab my wet suit from the closet, back from the day when I used to surf the Oregon coast. I even find my booties and gloves. Our arms draped with snorkeling and photography gear, Jeremy and I head to the river on foot. We run into my parents

walking their dog, and then another neighbor who, like me, had heard a flock of geese flying overhead yesterday. Already, yellow cottonwood leaves speckle the trail.

Jeremy shows me how to put on my mask to keep water out. When it fogs up, just wipe a bit of spit on the inside of the lenses, he says. Even though my wetsuit and gloves hug me tightly, I feel a cold shiver upward from my feet when I step into the river.

We crouch on our knees to get used to the water. “What would we see if this river was as complex as before settlement?” I ask. He says even scientists can only guess. It’s a matter of extrapolation. We have pockets of healthy, functioning habitats that serve as references, but it’s hard to imagine a whole system that way. I wonder how we can even begin to imagine it without experiencing the river in new ways.

Jeremy suggests we start by crawling against the current very close to the shore. Inch by inch, I submerge myself, and a lip of cold water rings the back of my head. My breath is jagged with sharp inhales until my skin accepts the cold.

Sinking underneath moving water is at first terrifying and satisfying. It might be the closest sensation to flying, but I am not manipulating or propelling the water but being propelled, passive to a force outside my body. With no sound but rushing water, I can almost sense the curve of the earth reflected from the river’s underside.

I have no words to describe what I see. It’s so different from anything I have experienced, a line I have not drawn in my map of the world, a reality of a river I’ve never known. This is not paddling on top of the water, or even walking in it. This is

floating it fully submerged. In this moment, I am as close to a stream as I can get—*under* it, down to the gravel bed. Maybe this hard bottom is the place where the truth of all truths reveals itself.

Underwater, all references recede behind a canvas of wetness. Mountains, grass, and earth become notional, and earth-based metaphors and language turn upside down. Even sound becomes muddled, like sun-warped records.

Jeremy points to aquatic insects underwater. Disoriented at first, it takes me several seconds to focus on what he is pointing to. Then, huge caddisflies become visible, slugging against rocks in their stone cases as they scrape algae from the surface. Sculpins with fanned fins dart near the riverbed, and small native fish called red-sided shiners swim around my head. Every so often, we emerge from the water so Jeremy can tell me what we're seeing.

"You can see things so much easier than I can," I say. "It's like my eyes don't know what to look for."

"But people who snorkel for the first time often see things that I don't anymore," he says.

I give a half smile, doubtful that I can find anything he hasn't already.

After exploring the river by crawling upstream, Jeremy suggests we float to deeper, slower pools to see what we find. That's when he tells me to let go. And if we hold still long enough, he says, the fish might think we are just a log and start swimming with us. I let go, feet first, and watch the world play back in reverse.

I remember the weightlessness, the flashing light rippled by water, the initial panic of letting the current take me. Even the passage of time, which we mark on a daily scale by light, diffuses into something imaginary. No longer segmented by sun and moon, time unfolds in a continuum of current, the unceasing force of gravity moving things downstream.

Aquatic life has developed remarkable adaptations to live in the incessant tug of gravity. Some insects have a flattened body to avoid getting swept away in higher velocities. They call it ‘streamlined’ for a reason. Some have suction cups, grapples, or secretions to root themselves to stones or other surfaces.<sup>37</sup>

We emerge for a moment. Imagine you are an aquatic insect, Jeremy says. All at once, you must survive and exploit the current, fight it and use it to feed. If you are a black fly larva, you have a silk gland at the base of your abdomen to glue yourself to a rock, and fans near your mouth catch incoming particles. If you are a net-spinning caddisfly, as a larva you use silk to build a net and catch passing food. And if you are a water penny—an aquatic beetle—you cling to the underside of a rock with your flat, copper, and oval body and use scrapers attached to your legs to remove algae from the surface.

I have none of these adaptations, but I reach a place of calm and accept the force of river moving me downstream. Mayflies will do this, too. When they have

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<sup>37</sup> Hynes, H. B. N. (1970). *The ecology of running waters*. Liverpool, UK: Liverpool University Press.

scraped all the food around them, they sometimes jump into the current and drift to feed.

And so I drift. For once I relinquish control and just float. I don't manipulate, trample, or degrade my surroundings. I have no kayak or measuring instrument. I just am. At last I feel like a participant in this billow of water and light and become, as Jeremy has suggested, a log. A school of small dace swims with me, and one presses its pointed nose against my skin in soft kisses. I smile too big and river water spills in my mouth.

We move on to snorkel the Calapooia, a tributary of the Willamette River. Jeremy hopes we'll see more here, but the put-in is crowded with people playing and floating. No matter, he says. At least people are getting on the water.

This time I really explore. I find the swiftest riffle and anchor myself in the middle of it, just listening to the sound and feel of water pounding toward the sea. Without Jeremy around to point out things, I find them myself: a sculpin whose spotted body blends in with the streambed's colored pebbles, an inch-long caddisfly case, and then another, and another; I see tiny, iridescent fish about the length of my thumbnail.

I try again to describe what I'm seeing and find the words to make the experience known. Please remember this, I say inside. There is no sky but the one reflected through billowing water. The refracted sunlight writhes like an electrical

current charging between metal wires, surging through the space opened up by current. Instead of stars, tiny air bubbles spark the water's underside. And remember how quickly everything stirs. But remember the slowness of time, too.

As Jeremy and I are getting out of the water for the last time, I look down and see a water penny beetle on my hand. I likely picked it up while snorkeling a riffle. I almost mistake it for a flake or ovum-shaped pinecone seed. "Oh, it's a water penny," says Jeremy, his voice soft with astonishment. "I've never seen one in this area. Must be one of those things I've grown used to."

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There are experiences that move you closer to a place and make you wonder the meaning of the world, experiences like being on, in, and under the river. So what is the truth of a river? Is it a place without humans, something degraded by trash and revetments, something to be studied and analyzed, or something to live alongside, like a log? What does a river teach us? Commerce, science, or simple existence? How many ways are there to know a river?

I've always been the type of person to search for THE answer, the one path that will lead me straight to irrefutable knowledge. Life is made of iterative steps and there's only one way down the stairs. It's just a matter of peeling back layers until I reach that bedrock of meaning, that hard center of the really real. So I admit I've been

tempted to think that floating like a log while touching the streambed is THE path. It's the bottom of the stairs, after all.

Now, I'm not so sure. V.F. Cordova writes that "the story of the mountain people will not be the story of a desert people and their story will differ from those of the lakes . . . and all of them, the stories, will be true." Rivers may work this way, too. They are complex. They aren't supposed to be a single channel. They flow many places and reflect back a new world with every stir, constantly re-arranging the pieces and redrawing themselves. This is the practice of rivers.

I am trying to understand this practice and take away the riprap lining the walls of my experience that keep me from moving into a new way of seeing. I am trying to understand the value of complexity, both in our landscapes and state of mind. A new vantage softens the edges of our psyche and connects us in a way more felt than known. The more people experience, the more profound their connection to the world. Every experience is a transformation because it reflects back meaning that was before unfamiliar.

If you asked me what truth a river tells, I would say something that might have surprised an old version of me. I would say that you might think like a human but you can understand the world like a river. You can realize every experience you have is true. When the world is plural, everything becomes astonishing—a river's flashing silver smile, its depth and darkness, the light reflected on top and underneath, the weight of stones in your hands, and the secrets only a fold of current can keep. You

can float the river, study it, or drift quietly in its tug. Each of these ways will be right. And you can know that you will never know it all—all the intricacies and pathways—because even the streambed is not a stream's end.

## Dread

Dread (transitive verb): *a*: to fear greatly; *b (archaic)*: to regard with awe

Water tumbled over my head. All I remember was the shock of it, not the cold, but knowing that I had fallen in, that I had tipped my kayak and spilt my things in the Willamette. *Dear Mother of God how will I get to the shore without being swept downriver?* It wasn't a question I asked but felt, my whole body shocked into surviving.

There are times in the middle of the night even months after the incident when I awake in horror. Somehow, I am here sleeping next to my husband and not dead underwater. I am not ashamed to admit that I have thought about what people would say at my eulogy, what I hoped they wouldn't say—that I was a very cautious girl except for the time I made a big mistake and died.

The mistake started long before I fell in, likely when I got the urge to do a big kayaking trip alone. Ben or a friend had always been there to load the boats and help me read the current. I would tell people I wanted the freedom and luxury to go out when I wanted, without working around someone's schedule. But looking back at the initial idea to travel alone, I suspect the desire came from a more desperate place, a place not of honesty, but ego. I wanted to prove something to myself and to the world—that I could kayak alone and was strong enough to do it without the help of a

man. Rather than start small as a warm-up, I decided to go full throttle and plan an overnight trip.

The Willamette might seem like an unlikely place to make a really bad decision. I had paddled it dozens of times without incident, and each successful outing tricked my nerves into thinking I had this river figured out. It's much tamer than it used to be, and sometimes in late summer near the middle reach, the current moves at a sluggish or even standstill pace. But in other places and at other times, it has a power that today I can hardly ratchet up my nerves to test. But I did test its power on my first solo overnight trip from Irish Bend to Corvallis at a time when the river was supposed to be slow and calm, thanks to the summer's low rainfall and thirteen tightly controlled dams on the tributaries. But there are no "supposed to be's" with a river, and that assumption was my first mistake.

Depending on when you go, the put-in at Irish Bend can be a gravel beach with barbeques and bikini-clad babes. Ben helped me unload the kayak among the clamor of visitors and grill smoke. A man with a wooden boat pulled up next to us and started to un-strap it.

"Ya need help unloading her?" Ben asked the man.

"If ya wouldn't mind," the man replied.

"Ya build her?"

"Sure did."

I've noticed everyone slips into a kind of river tongue by the water, creating a lingual kinship among river folk. "How's it going?" turns into, "Howdy." Sentences become clipped and rough-hewn.

After helping the man with the wooden boat, Ben finished unloading my kayak and carried it down to a gravel shore. In my small, ten-foot boat, I packed a change of clothes, a sleeping bag, therma-rest, guide books, life jacket, whistle, cell phone, journal, binoculars, a snorkeling mask, first aid kit, headlamp, bug spray, sunblock, food, water, hard cider, and river maps. After saying goodbye to Ben and the two dogs, I paddled into the afternoon sun. It would only take an hour or so to reach my destination, so I had plenty of sunlight to get there. Or so I thought.

At Irish Bend, steep walls cup the river and farmland runs up to the cliff's lipped edge. Riprap is a familiar sight, but so are side channels and alcoves, osprey and great blue heron. In spots, the river can be swift, bending around elbows of land both highly developed and left alone. The stretch whispers of something bygone and forgotten, a place just out of reach but still witnessed. Snags scatter the water like arthritic hands straining to stay above the surface. Each time you go, the river might look different. A gravel bar becomes vegetated, the land shifts, and the hunched over tree you told yourself to remember next time might have fallen in.

A couple miles in, I took a side channel on river left around Norwood Island. The island is privately owned but undergoing restoration activities thanks to a conservation easement. I had read and researched this channel in my guidebooks.

They said the channel could be swift on account of the Long Tom flowing into the Willamette. But beyond mention of the speed, the books gave no other warning.

There are a lot of ‘shoulds’ in this story. Having never been down the channel, I should have scouted it first, even if I had read about it. I should have waited until the river was slower, and maybe I should have gone with Ben.

If I had scouted ahead, I would have seen the massive logjam blocking the channel and buckling an old wooden bridge. Despite the instinct to turn around, I spotted a small opening and thought I could get through. If I were a better paddler, I would have gone for it. But it was soon obvious that my beamy little boat couldn’t fit through the clutch of branch and wood. If I were braver, I would have finessed my way through the obstacle course and made it to the other side. But I did not scout, I was not a better paddler, and I was not brave. Before too long, I was caught in a tangle of current and flow, trying to negotiate the mighty gravity tugging the river downstream, and the friction of water hitting branches that scattered the river in all directions.

When I realized I would run into the logjam, I turned my boat so it would hit broadside. Just before impact, I leaned toward the jam to grab a branch so the water suctioning under the log wouldn’t flip me over. A hollow thud sounded as my boat rammed into wood. *This is it*, I thought. *This is how people die on rivers*. Strainers suck you under until you’re caught in swirling water and drown.

If you get knocked out of your boat, I've heard the best thing to do is dive down to get out of the suction, but this presumes there are no other branches or obstacles below that might quicken your death. The other option (if you know you're going to hit the strainer) is to swim toward the object with all your might and heave your entire body over it so you get kicked downriver. I did neither. I was still in my kayak, grasping a branch while gritting my teeth.

With my kayak parallel to the length of the log and stern pointing river right, I used the branch to heave myself backwards toward the shore. Then when my arms were extended forward as far as they could go, I would quickly release, grab hold of another branch, and move the rear of the boat another foot toward the right shore, all while fighting the suction trying to flip my kayak. It seemed like forever, but the water calmed. Then, I spun the nose of my boat a quarter turn and paddled against the current as hard as I could (stoke-stroke-stroke-stroke), determined not to let the water sweep me downriver and back to the logjam.

I should have read the online guidebook about Norwood Island that said paddling upstream this channel is difficult, if not impossible. The current looked swift going in and felt even swifter paddling against it. I zigzagged across the channel to avoid strainers and stuck with the slower flow on the river's inside bend. My progress was slow and painful. My arms burned, sweat broke out on my forehead, my heart thudded against my fear-struck rib cage. Before the fastest part, I pulled over to the bank and rested in a rootwad so I could plot my way out. It didn't look good. The

nearby bank was tall and steep, so portaging my boat seemed impossible. Looking to the river, I couldn't see any smooth sections that might help me across this conveyor belt of water. I would just have to paddle upstream with my muscles and will at full tilt, which in the end, wasn't enough. Despite grunting, paddling, praying, pleading, and thrusting my body forward in time with my paddle strokes, I had progressed maybe ten feet with another fifty to go. I had run out of steam.

Under the fold of some brain lobe, my synapses made an executive decision and I quit paddling. In an instant, the water spun my kayak around and shot me downstream back toward the logjam. My kayak hit a strainer broadside and flipped over. Cold water. Wide eyes. Sharp gasps. Somehow I grabbed onto the gunwales of my overturned boat and swam to the rootwad where I had rested only a minute before. Somehow, I kept my paddle, backpack, sleeping bag, food, and even the hat on my head.

With my boat wedged into the gnarled hands of a cottonwood, I knelt in the river mud and wept, telling myself how stupid I was to cry, and then telling myself how stupid it was to not want to. I wished Ben were there to help me, then I cursed for wishing something I convinced myself I didn't need. The reality hit like a cold punch to the gut: Ben was not there. My cell phone didn't have reception. I was alone. I needed to get past sixty feet of swift upstream current to get back on the mainstem. The thought only made me cry harder.

Wiping away tears and gritting my teeth, I looked to see how I could get up the seven-foot bank. The once impossible became my only option. I was going to portage my boat, which meant lifting it over a sheer edge crawling with Himalayan blackberries. A small section of the shore was packed with a mound of muddy sediment. The sediment formed a two-foot shelf that could give me some height to hoist myself onto the bank, but I figured I could only step on it once or twice before it crumbled against my weight and washed into the water. After that, I might not have a way to get on land. There were no nearby branches to grab, and I would be too short to climb ashore without the mud mantle. Later I would read online, “portaging this stretch is inconvenient.” Inconvenient is about the nicest way you could put it.

First, I tied my boat up and scouted ahead in case the portage was impossible. That was one use of the mud shelf. It had better be worth it. Though thick with blackberries, the bank had an opening where I could get around the current.

From some unknown and secret place of strength, I was able to get all my gear onto the bank without spilling anything, even though my arms were weak from paddling. Once my boat and gear were shoved ashore, I stepped on the mud shelf again to climb the bank, and from the edge, I watched the sediment sink and sift into the water. Then I stuffed my kayak with gear, slung a backpack over my shoulder, and pushed through the blackberries about twenty feet closer to the mainstem Willamette.

Muddy, sweat-soaked, and trembling, I slid my kayak down the steep bank and back into the water. *Just forty more feet. The water doesn't look so swift. Dear Mother*

*of God and all that is Good. Please let me leave this place. DearDearDear Mother of Sweet Sweet God, this is my only option so let me take it.*

I paddled hard. I could see the flow of the mainstem Willamette. *I promise that I will pray more.* Forty feet turned to thirty. *I know I don't go to church anymore but maybe I'll start.* Thirty feet became twenty. *Dear Lord I know I'm selfish and swear too much.* Twenty feet became ten. On the last stretch out from the side channel, a willow branch snagged the sunglasses off the top of my head. "I don't give a shit! You can have them," I said aloud. I'm not sure if I was talking to God, or the river. Either way, I was lucky to have lost these and not my life.

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I arrived two hours later than expected at my overnight destination—Sam Dawes Landing. The turn of the Earth was pulling the sun down fast. I took out my wet things and hoped the remaining light would dry them. Small gravel bars and willows sat cloaked against a sky the color of something I wanted to drink. Behind me, a small channel meandered, and beyond that, a fortress of cottonwoods harbored a group of juvenile bald eagles. For a moment I thought they were golden eagles, since one has been reportedly sighted here, but then I heard their call, which registered between a staccato horse neigh and maniacal monkey.

Trudging around, I flushed out a fawn still with its spots. Beaver and white-tailed deer tracks pitted the soft earth of the shore. For what felt like hours, I sat and

watched clouds slide across the now-pale sky. Such a place pulls you into a center you swear you knew once, maybe not actually, but in a dream.

There's a feeling that comes after surviving danger—a flutter in the heart, an almost imperceptible weakness in the knees, and a careful step. But that's not all. If it were, nobody would ever go out to wild places or face the unexpected. Along with the sinking feeling in your gut—that you just cheated death—is also the rise of something so primal and childlike, so unfiltered and unprocessed. After danger you will notice the feeling of wind trilling your skin; maybe you will smile at the soft drumbeat of your heart. The feeling reaches deep inside, resting in the momentary awareness of being alive. It was there with me on that island.

As my body shook, all I could think of was the texture of my grandmother's hands, like paper-mâché, and I suddenly wanted to hear her raspy voice sing every song she knew. Then, I imagined Ben wrapped tightly in a thin sheet getting ready for bed, the way he sleeps in the summer. I wanted to listen to my dad talk about the birds he saw that day, without distraction or thinking about all the work I had to do.

Experiencing the world in wildness made the echoes of my relationships clearer. It was as though I saw ripples in water, but also found the stone that made them. In surviving danger, we come back around to the people and places that make us whole—like concentric circles connecting beginning and end, forming a new but somehow familiar tale of a hero whose narrative resembles our own, a narrative of going out alone, facing danger, crossing thresholds, and coming back transformed.

Ask me what I think about danger, and I will tell you it can be something good, not wholly, but partially good. I say this even knowing that restoring and re-connecting some of the Willamette's channels could increase its wildness and even danger. I would not have believed the goodness in danger before going out alone. Let me get something straight: I would *never* knowingly risk my life on the Willamette again. But after facing danger first-hand, I have been able to understand the complexity of what it means. I understand the menacing unexpected is not just about fear and horror, but an acknowledgement that existence itself is sacred.

That night, I slept in a depression of grass I imagined a deer made. Throughout the hours of darkness, a great horned owl called in a song I could not decipher. I was content to just listen and not tax my brain with the meaning of it. Sleep came like a slow descent. Each breath carried the power of two dissonant emotions with a single name—a simultaneous sinking and rising, an emptiness and fullness. Together, the weight and lightness resonated inside, then up towards the sky. And what kind of sky was this, with both darkness and shine? The blackness above faded to an iridescent glow, with the hills beyond rimmed by a line of glorious blue.

## Memory

I was sitting at the kitchen table when my mother told me. “Grandpa has Alzheimer’s,” she said, her head lowering as if telling a secret. Apparently, during a routine checkup at the hospital, my mother’s father wandered off and became disoriented, soon frightened, and realized he didn’t know where he was or why he had left his home in the first place. Grandpa had been falling, too. Sometimes he’d be taking a walk and suddenly lose his balance. We’d all assumed his legs were just getting old.

“Oh my God,” I said in a whisper, bringing my hand to my mouth. My mother pressed her lips together. Her brow furrowed. She nodded several times, not just with her head, but her whole torso in slow, rhythmic bows, keeping her brown eyes locked on mine. I waited for the good news—that it might not be Alzheimer’s at all. How could it be? Grandpa was just dancing at my cousin’s wedding a year ago. He had just been out for my brother’s high school graduation and smiled in praise like everyone else. But my mom was silent and kept pressing her lips, as if to say, *this is what happened and you have no choice but to believe it.*

I don’t remember if I asked any questions. I don’t remember if we talked about it for a long time. But I do remember my mother’s pressed lips and stare.

Days later, I called the local chapter of the Alzheimer's Association and asked a woman to tell me, in the simplest terms, what causes it. "We're living too long," she said.

"Oh I see."

I quietly thanked her before hanging up.

When I first found out, all I could do was think how cruel life was to take away a person's memories. I've tried to imagine it. All those pathways carved into my grandfather's brain by people and places, all those experiences nestled into neurons, all the stories, lessons, and memories taken away. Do the channels of the brain disappear? Do the network of dendrites shrink and dry up? What happens when you can't recall an experience anymore? Do you unlearn a lesson? Do you un-become yourself?

My grandfather's disease is even more mysterious because I don't know much about his life and the experiences that anchored his memories in the first place. I can count on two hands how many times I've seen him, since he's either lived in Illinois or Florida, which means I've had to thread stories together into a makeshift map of who he is. I've collected scraps of him, piecing him together from stories told and retold, or from old photographs of a tall, handsome man with a dazzling smile and swept-back brown hair.

I know he grew up poor. His father was a stern minister who didn't believe in medicine, only God's power to heal. My grandfather watched his mother suffer from

diabetes and die from gangrene because she wasn't allowed to get hospital care. Then, my grandpa learned a harsh lesson in hypocrisy when his father checked himself into a hospital to cure a bout of tuberculosis. My mother said that growing up, she and the whole family went to church, except for Grandpa. He stayed home.

But I know there are things about a person you can't discover from photos and stories, like the ways he laughs and what he loves, the pitch of his voice when he's excited or sad, the softness in his eyes when he apologizes, or what places in the world make his heart quiver. These things, I can only guess.

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Lately, I've been looking at old maps and photos of the Willamette. Before bed, I like to stare at a section of river from the early days of settlement. Then I get lost in the fantasy of experiencing the historical Willamette, to stand on its wooded banks and watch it swagger and curve in all directions.

One image I've looked at many times is a late-1800s stereo-card called *Trouting on the Willamette River, Oregon*. The image shows a wall of fir trees with speared tops in the distance, and two men in the foreground fishing in the shallow waters. Gravel bars and islands rise from the water, and roots from fallen trees snarl the shore. The river splits and then rejoins, flowing around vegetation and creating a network of channels. In essence, it's complex and messy.

Images like this stereo-card are all I have of what this river used to be. All I have is the second-hand telling of history that I've strung together into an

interpretation that may or may not be true. No matter how long I look at this photo, though, it can't tell me the sounds the men heard while fishing, the sweeping water around tree trunks. It cannot show the flashing silver blades of trout cutting through current, or the tangy smell of broken stem mixed with baked earth.

When I read about the Willamette's four-fold decrease of river shoreline<sup>38</sup> I imagine all that complexity and all those seams between earth and river unraveling bit by bit. What happens to those pathways of the river once they are filled, dredged, diked, and dammed? And how many can disappear before it is no longer the same river?

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For two years, we didn't hear much about my grandfather's Alzheimer's. I'd check in once in a while, and Mom said he was doing fine, or that his medication and therapy had slowed the progression. But then, my mother visited Grandpa before he was put in a home, and during one conversation, he referred to his wife—my step-grandmother Eileen—as “that woman in the kitchen.” The woman he had called his soul mate became a nameless face, just like that.

It seemed that if we turned our heads away for even a moment, we would find slight but troubling changes to his mindset when we looked back. He'd forget a name

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<sup>38</sup> Sedell, J. R. & Froggatt, J. L. (1984). Importance of streamside forests to large rivers: The isolation of the Willamette River, Oregon, U.S.A., from its floodplain by snagging and streamside forest removal. *Verh. Internat. Verin. Limnol*, 22, 1828-1834.

or get confused in an unfamiliar place. He was mostly whole—mostly Grandpa—but bit by bit, he began to change.

“Did you tell Grandma Eileen that he forgot her name?” I asked my mother after she returned. “No,” she said, “squinting her eyes, not in a grimace, but almost. Even though I wanted to, I didn’t ask anything more about it.

But then, all would be well. Mom said Grandpa told vivid World War II stories, and he recalled the names and ranks of all his fellow fighters. This surprises everyone because he has never talked about the war before. He told a story of how he almost crashed his plane. Coming down from cloud cover, my grandfather realized he was dangerously close to nose-diving into the ground. If it weren’t for the hands of some unknown force, he insisted, he would have died. This also surprises us, since he has never been a religious man. My grandfather has never wanted a funeral or any ceremonial celebration of his life when he dies.

My mother visited again a year or so after my grandpa forgot his wife’s name. He kept a list of other people’s names as a reminder of who they were. But even with this, he would forget. Once, his eyes glazed over in confusion as he was talking to my mother, and it was clear he didn’t know who she was. My mother told me this at her kitchen table, the same table where she first told me that Grandpa had Alzheimer’s. Inside I was appalled, thinking what it must feel like to be erased from your father’s mind, to be an abandoned and hollowed spot that once was full. Imagine that fragile, heartbreaking feeling, seeing that momentary flicker of doubt in his eyes, that scared

face saying, *I don't know who you are*. It must have felt like a solid punch to the heart, one without reprieve, because nothing can be done about it. There is no going back to how things were.

“Do you feel like you’ve lost your father, even though he’s still alive?” I asked. My face was still, but inside, I was begging for a tender moment with my mom. “Yeah I do,” she said, matter-of-factly. She continued to set the table for dinner, her eyes looking down while folding a napkin. Then, she looked up at me. “He’s not the dad I knew.”

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I am looking again at the stereo-card of the two men fishing trout by the Willamette. By now, the two men are long dead, and the riverbank they explored might be buried. Maybe it’s a gravel pit or the view from someone’s home. Even if the place they fished is gone, I try to imagine how the river in the photo became the river I know today. It might seem that it happened over night, as if one day, the channels dried up and vanished. But it probably happened slowly, one closing dam at a time, until the two men turned their heads and saw the place they fished slightly altered. Maybe those looming firs were cut down, or the trout didn’t flash as brightly, as fewer of them swam through the current.

Academics debate how and when the Willamette lost its channels. Some think it happened mostly during settlement, while others say it happened more dramatically as agriculture expanded in the mid-twentieth century.<sup>39</sup> Either way, it took decades.

I imagine the two men were astonished to see slight but troubling changes to the river. They walked to their fishing place and flushed with alarm when they saw it had changed. But maybe they weren't shocked at all. Citizens seemed bent on furthering the river's detachment. In the 1930s, Oregon constituents rallied for federal aid to prevent flooding and maximize the land for productivity. In response to public and industry demand, the Willamette Valley Project Committee was formed with lofty goals of building high dams to keep the river in check. The high dams would also keep the Willamette from flowing into its former channels. William L. Finley, a nationally known naturalist, was the only individual who "spoke out early and often against the building of high dams on the Willamette drainage."<sup>40</sup>

One voice was not enough. Willamette Valley citizens wanted flood control to protect their assets and infrastructure. The Army Corps and supporters of the committee had their way, and the first two dams were installed in the 1940s. The social and economic forces surrounding dam installment explain the widespread

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<sup>39</sup> Wallick, J. R., Grant, G. E., Lancaster, S. T, Bolte, J. P., & Denlinger, R. P. (2007). Patterns and controls on historical channel change in the Willamette River, Oregon, USA. In A. Gupta (Ed.), *Large Rivers: Geomorphology and Management* (pp. 491-516). Hoboken, NJ: John Wiley & Sons, Ltd.

<sup>40</sup> Robbins, W. G. (1978). The Willamette Valley Project of Oregon: A study in the political economy of resource development. *Pacific Historical Review*, 47, 585-605.

public support. The majority of the dams were installed after the floods of '43 and '45 (almost two consecutive years of devastating high water) and during the post-WWII economic boom.<sup>41</sup> Today we have thirteen major dams on the Willamette's tributaries, plus a whole scattering of smaller ones on private land.

Over time the Willamette behaved differently in its rhythm and patterns—no longer meandering where it used to and abandoning places it shaped long ago. Historically, the river had peak flows around February, and maybe another in April or May.<sup>42</sup> Today, the frequency and intensity of peak flows have been reduced, with reservoirs dampening them by 30-50 percent.<sup>43</sup>

I've wondered if the two men in the stereo-card even noticed the Willamette change. Maybe they forgot how the river used to flow and flood. Does the river forget too when those channels dry out?

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My mother was sitting cross-legged on the couch, surrounded by junk mail, old calendars, and random bill statements to sort through. I told her I wanted to talk about Grandpa, because I didn't understand what was going on. I thought we should all be sadder than we were. I thought we should be talking about it more. I wanted to cry and see my mother cry.

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<sup>41</sup> S. Gregory (personal communication, May 4, 2011)

<sup>42</sup> M. Pope (personal communication, July 20, 2010).

<sup>43</sup> Gregory, S., Ashkenas, L., Jett, S., & Wildman, R. (2002). Flood inundations/FEMA floodplains. In D. Hulse, S. Gregory & J. Baker (Eds.), *Willamette River Basin atlas: Trajectories of environmental and ecological change* (2<sup>nd</sup> Ed.) (pp. 28-29). Corvallis, OR: Oregon State University Press.

But it was chaos in their living room. My sister was over and talking about her new house. My dad was trying to show me the difference between pintails, teals, ring-necked ducks and Northern shovelers. My mother started telling a nonsensical conversation she had with Grandpa over Christmas. Apparently, it went something like this:

“Hi Dad.”

“Thank you honey. Oh thank you honey.”

“Oh that’s nice dad.”

“Thank you honey, oh thank you honey. Thank you honey. ”

“Alright Dad, well, I better go.”

“Thank you honey, oh thank you honey.....”

Then, midway into another story, my mother would mutter something to herself: “I don’t know why these people keep sending me return address stickers...”

I had a million questions. Was Grandpa really bad? Could he talk normally? Does he think? Does he still tell stories? What does his brain look like? As soon as I started to ask one question, my dad called me to the computer to show me pictures he took of Northern shovelers with their spade noses.

I sat back down. “Mom do you know what is going on in his brain? What does it look like?”

She paused. “I don’t really know.”

Then she looked down at a piece of mail from Doctors without Borders. “Do you have any need for a map of the United States?”

The computer at my work desk flickered on, casting a blue glow across my hands. I had come in early to see what an Alzheimer’s brain looked like, since no one in my family seemed able to understand or explain it. I typed in “Alzheimer’s” and searched for images. I am still haunted by what I saw. One image showed a slice of a healthy brain next to one with advanced Alzheimer’s. The normal brain was peachy and ringed with curving folds, like a river delta. In comparison, the Alzheimer’s brain was shriveled and hollow. Dark spots and holes punctured the lobes, the absence of brain. The thick pink folds of the healthy brain became gnarled, garish stubs in the Alzheimer’s brain, something stunted, withered, and shrunken. Another photo showed channels of dendrites and axons severed from the neurons and dissolving into obscure hazy clouds. These hazy clouds hovered over disjointed dendrites.

An accompanying article said our experiences create patterns in the types of signals zipping through the brain. These unique patterns are how the brain codes our memories and sense of who we are. Alzheimer tissue has fewer nerve cells and synapses than a normal brain. Over time, nutrients and other essential supplies can no longer move through the cells, until the cells die. Alzheimer’s literally simplifies the mind.

I got up, shut the door to my office, and quietly cried.

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Before bed one night, I compared a map of the Willamette River in 1854 to one in 1975. Ben turned off his bedside lamp and gave a sleepy goodnight, while I kept puzzling over the maps. The difference in river channel complexity was astounding. In the 1854 map, channels meandered their way across the valley floor. They curled, arched, folded, and coiled to create a unique pattern. Channels extended outward or looped together to form islands. The 1975 map showed the same river, but it was shriveled and disconnected. Tiny dashes showed the faint suggestion of where river once moved across the land in dazzling sweeps. The absence of channels wasn't like dark holes. It was marked by the glaring white of the page. So much page and so little river.

Where does all that river go? I know some of it dries up, and some of it goes to our homes and to the fields. Gas-powered pumps pull river water into pipes that feed irrigation sprayers. The water sprays into the air from a million jets and dissolves into hazy clouds. I have seen rainbows in those clouds, some scatter of light caught in the river's prism and lifting to wind. It looks like a spray of color hovering over places where river once flowed, over the disjointed channels and bends.

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Recently, I read through a journal I kept as a fourteen-year-old. The journal had a fairy on the cover with a purple border. In between heartthrob dispatches of so-called loves that never were, I had written about something that surprised me. I wrote about when

the Willamette River flooded in 1996, the only experience I've had of a true flood.

"The roads have changed so much!" I had written. "They are no longer roads, they are rivers. Now the whole city is just covered in thigh-high water . . . and we're in a state of emergency."

Reading this, I recalled that winter of late snow and heavy rains that followed. I recalled the roiling brown waters, my mother and I huddled in coats while walking to Willamette Park to see the high river. We stood still for minutes in awe of the drowned parking lot. I recalled people floating in canoes near my home and how my family was stuck inside with no working phone for three days. For three days the world stopped, or at least turned a little slower. Everything normal like school and friends was suspended, and our family entered into a time of closeness brought together by a restored wonder in the world—that a river under the tight grip of humans could still flood.

Years later while volunteering to help paddle elementary students down the Willamette, I would see an aerial photograph of this flood. Before we hit the water, parents, teachers, guides, and students circled around the aerial photo of the flooded river, with brown water filling in dead sloughs and disintegrated channels. From above, we saw the river transformed from a single pathway, to dendritic channels branching into places that no longer existed on current maps. Brown channels charged and pulsed across farm fields and homes, reaching into and reconnecting forgotten streambeds. I stretched my hand across the image, and the river meandered beyond the

length of my fingers and palm. Then, I did the same to a historical river map blown up roughly to scale, and my hand stretched about the same distance. We didn't have to imagine or wonder it into existence. The river in 1996 became nearly as wide as it once was. Somehow, even though people seemed to have forgotten how the Willamette once looked, the river never did.

It was then I realized that rivers have memories—ancient ones that are recalled over and over again through flooding. Even with dams and irrigation sprayers and filled-in fishing holes, the river still floods and finds its channels. The memory doesn't go back as far as it did before the dams. But it still remembers.

The Willamette has recalled its former channels many times. In 1881, a flood roared through that destroyed all the fall wheat on the Long Tom valley. Bridges were taken out or relocated. Tales of families escaping the high waters scatter old news clippings. One story tells of a family by the name of Ash living in the woods when the high waters came and drove them from their home at 2 a.m. Grabbing lumber and nails, Mr. Ash built a tree fort for shelter. As the waters rose, he built higher and higher, until another family came to the rescue by paddling the floodwaters with oars “being made from rails.” Altogether, the Ash family was stuck for twenty-nine hours, half starved and frigid.<sup>44</sup>

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<sup>44</sup> Associated Press (1881, January 28). The flood! Reports from Corvallis, Salem, Oregon City, Albany, and other places in the Valley. *Eugene City Guard*. Retrieved from <http://news.google.com/newspapers?id=hUtXAAAIBAJ&sjid=9u8DAAAIBAJ&pg=6212,622248&dq=the-flood-reports-from-corvallis&hl=en>

In the flood of 1943, at least nine people lost their lives, and hundreds were reported homeless<sup>45</sup>. In 1964, some 17,000 were homeless, and the old-timers in Junction City, even though accustomed to floods, were amazed at the “new river” running through the town.<sup>46</sup>

Time and again, through the years, the Willamette River flooded and reconditioned its channels, forming and reforming its pattern. Human memory is encoded in the same way, written by the initial experience but reinforced and changed through recall—something not quite like perception or imagination, something not quite real or based in current experience, but influencing our realities all the same. Both rivers and humans re-write themselves through time, with long-gone realities continuing to shape the present. But where humans forget, rivers have the advantage of floods—those cleansing waters that come again and again, that expanse of river, the freshet that redraws the pattern and makes things whole again.

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“Papa and I have decided to go to Tampa to see Dad & Eileen,” my mother wrote in an email. I read it while getting ready for work. I stopped eating my toast. “He is not doing well, and it’s time for us to go. One thing I want to take are stories about Dad

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<sup>45</sup> Associated Press (1943, January 4). Nine Oregonians die in Willamette flood. *Los Angeles Times*, pp. 1A, 2A.

<sup>46</sup> Associated Press (1964, December 27). Worst appears to be over. *Eugene Register-Guard*, pp. 1A.

that I can tell him while there, even if he can't understand or respond much. So, do you have a story or two I can share while there?"

I read the message and then wiped away a few tears before Ben could see. I cried because I couldn't think of a powerful story. All I had were the faint outlines of memories. I remember him coming to visit when my mother was about to give birth to my brother. I came home from school and suddenly in the kitchen there was a tall man with white hair, not like the full head of brown hair I would later see in pictures. I remember telling him that I wanted a pair of red high heels when I grew up. Instead of lecturing me that five-year-olds shouldn't want high heels, he just let me fantasize. I remember going into my parents' room in the morning with my sister, like we would every morning, and instead seeing my grandpa and Eileen. My mom had given birth to my brother in the middle of the night. My sister and I jumped and screamed in excitement. Small stories like these were all I had.

A few days before my parents left for Tampa, my father called and told me Grandpa can't even talk. He plays with crayons and has his diapers changed like an infant. So this is it. His essence has drained and ebbed into hazy clouds that give no suggestion of who he used to be, or of places his mind once meandered. The dendrites like channels have dried, the space between them unable to hold the pattern of a man I had hoped to know.

How did I ever let it happen this way? Your elders are supposed to teach you wisdom. Why else would we live for decades after our childbearing years?

Biologically, we may serve no purpose once we can no longer pass on our genetic imprint, but culturally we do. My grandfather's channels of experience are deeper and more expansive than mine, but I will never get to walk them. I have no stories of sitting on his lap and listening to his resonant voice tell me how the world works. He will only exist through other people's memory and the faintness of my own.

Writer and environmentalist Freeman House says, "In one ancient language, the word *memory* derives from a word meaning mindful, in another from a word to describe a witness, in yet another it means, at root, to grieve. To witness mindfully is to grieve for what has been lost."<sup>47</sup> Memories are not just about nostalgia or sharing a good story. They are testaments of things lost, of places no longer wild, and of people no longer whole. So I remember my grandfather as best I can. And I do the same for the river.

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Just before my parents leave to say goodbye to Grandpa, I take a walk to the river with Ben and the dogs, but we don't get far. The path is a river channel. The water has flooded up and now trills quietly. We watch the water sift and stir around the trunks of submerged trees. The white alders dangle their seedpods, almost in an offering to the riverbed. Ben climbs an algae-slick log to see how far back the water flows. It's a long way, he says. We should kayak this, I say.

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<sup>47</sup> House, F. (2000). *Totem salmon: Life lessons from another species*. Boston, MA: Beacon Press.

A father and mother with two small boys come to see the water. The dad is explaining what happens when it rains and rains and rains. It floods, he says. He doesn't say it with malice, just acceptance. One boy comments that they should get a vacuum cleaner and suck up all that extra water. Ben and I turn toward each other and laugh softly.

I know that the Willamette has lost some of its pathways. It is simpler. The channels have been blocked. They don't function like they used to. It's not as rich and complex as it used to be, but it still floods. It still has a memory of where it once flowed. The water finds the channels, filling them up, swollen and wonderful. It's not permanent, and it will never be like it was, but at least for a time the Willamette finds itself and is whole once more.

The story is not the same for my grandfather. He will keep receding further and further until he dies a stranger to himself. There will be no flood to bring him back.

## Story Mapping

“The universe is made of stories, not atoms,” says poet Muriel Rukeyser. If she is right, then we are made of stories. They join to form complex narrative compounds that build our bones and skin, combining in odd and wondrous ways as we grow. Around campfires and dinner tables, between two friends, and in the tight circles of teenagers, people share the essence of their lives—this communion of experience fundamental to our existence.

If Rukeyser is right, then the earth is also made of rich tales. Stories of the land in particular fascinate me because they reveal the intricate tangle between humans and the places they live, the topography of both the earth and storyteller. I’ve wondered what tales rest in the soft mud by the Willamette’s banks, or what bits of narrative would waft up like molecules if I pressed my palms into the wet stones of a gravel bar. What does the Willamette River look like in story form, a great tome of tales written by thousands of people, told over thousands of years?

I’ve also wondered what stories could disappear if I did not start listening. So many from the Kalapuya people already have. A few still exist, like the one about when Mosquito told Lightning that he gets his blood from white fir trees. Lightning

believed Mosquito, which is why Lightening always strikes white fir trees looking for blood.<sup>48</sup>

The Kalapuya people may have known their stories were in peril. One of their prophecies tells of a man who lay down in an alder grove and “dreamed his farthest dream.” He dreamed of his lands taken over by white men: “the white men came,” the prophecy reads, “...and we knew we would enter their dream of the earth plowed black forever.”<sup>49</sup>

The Kalapuya prophecy was right. The white man came and many stories were lost. I was afraid that, like the Willamette’s old channels, the memories of remaining stories would dry up. So I talked to people with a long memory of the land, to learn about how the Willamette used to look and how it changed over the years. I wanted to hear about cleansing floods that swept the valley floor or reclaimed a slough, or about the channels that still meander in the minds of people by the river—because taken together, stories and memories create a map of the place we live, one that shifts through time and is buried inside us.

Here are the simple stories of a few farmers and landowners. I share them in hopes that they redraw a map of the Willamette River, a place deeper and more complex than our current experiences can take us. I can’t promise all these yarns are

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<sup>48</sup>Juntunen, J. R., Dasch, M. D., & Rogers, A. B. (2005). *The world of the Kalapuya: A native people of Western Oregon*. Philomath, OR: Benton County Historical Society and Museum.

<sup>49</sup> St. John, P. & Wendt, I. (Eds.). (1993). *From here we speak: An anthology of Oregon poetry*. Corvallis, OR: Oregon State University Press.

straight and true. In the same way maps distort continents, story maps bend realities. Interpretation is the right of the mapmaker, and I honor this right.

*Gary and Steve Horning, Deerhaven Farms, Monroe, Oregon*

Gary and Steve Horning, the father and son team of Deerhaven Farms, know a lot about the Willamette River—their family having farmed next to it since the early 1900s. On an overcast but dry day in November, they agree to talk to me about their family’s history with the river. Both father and son are tan despite the sun’s weeks-long absence. Both wear green button-up shirts. And both hold a steady eye while talking, the mark of someone knowledgeable about the subject at hand.

With hands clasped on the table, Gary talks about his family’s history with the river. On his mother’s side, the family moved to an area along the Upper Willamette called Harkins Lake around 1910. The other side of the family came into farming a generation later. Gary’s father first bought property down on the river as a teenager before serving in WWII. When he returned around 1945, he followed a simple edict from the United States government: clear the land and feed the world. So Gary’s father cleared the thick brush with dynamite, taking off only Christmas and Easter so he could start the farm.

Gary’s grandfather remembers when the Willamette River froze and became an ice highway. His grandparents on his mother’s side recalled a time when Harkins Lake was truly a lake, not like the hook-fingered channel seen on maps today. In the

1930s, the river crested, and Harkins Lake cut through close to the family house, lapping the porch steps with water. “My sister has pictures of it,” says Gary, “It’s just a house in the water. A lot of the houses were built up three to four steps. And back when that flood came, most of the houses had water up to two or three steps...there were a lot of stories of the army coming to rescue people, and then a lot of locals ending up rescuing the army,” he says with a soft chuckle.

Even twenty-five-year-old Steve, a fourth-generation Horning, remembers the flood of 1996. He and Gary could ride in a pickup and stick their hand out the window to touch the high water. “There was one time—he was pretty young in ’96,” says Gary, pointing to Steve. “But I told my wife, ‘roll the windows down.’ And she says, ‘why?’ And I said, ‘if it warshes us off the road we want to be able to get out.’ Because you could feel the pickup moving sideways. We decided, this is just a little bit too high. We’ll go back to the boat.” And back to the boat they went. For a whole week, Steve took a little motorboat to school. Coming home, he used a spotlight to find his way back in the dark. The story surprises me because I also remember the ’96 flood. My family was inconvenienced with high water for three days, but it was nothing like the three months the Hornings had to deal with water on their land. The flood got old, both Steve and Gary admit.

I ask the Hornings how the river has changed over the years. The flood regimes are different, Gary says. More backwater areas are filling in with silt. Before all the dams and revetments, the floods were bigger, but quicker. Now the Army Corps keeps

the water at bankfull longer so it lingers and doesn't clean out the sloughs. "The sloughs now are all dead," says Gary, lingering on the last word and tinting his sentence with a kind of sad resolve. "They've been dammed off at one end or the other, and they're just big stagnant ponds. You can look at the maps and tell the river has been changing forever. But we've changed the way it changes."

The Hornings are in the early stages of going through the restoration process—the planning, assessing, and long haul of permitting and monitoring. Hearing this, I want to know what restoration means to a farmer, what it meant to a family with four generations of memory and stories etched in their bones. Steve says they want to open up Harkins Lake so it can provide habitat and flood storage, since it has been silting in over the years. Gary chimes in. "I'd like to see the Harkins Lake channel alive again," he says, with an almost imperceptible nod. Even when talking about a channel that has surrounded his family's farm for one hundred years, Gary is steady and economical in his movements. But his soft eyes show a wisdom and deep connection to the land and river. "It's one thing when you sit there and you grow up around it, and you slowly see channels die. We've filled a lot of channels and sloughs, even in my life...But that one (Harkins Lake) was a real living area, and it's turning into that stagnant pond. It'd be nice for it to come back."

*Ed Rust, Little Willamette, Albany, Oregon*

Ed Rust didn't become a farmer, even though agriculture is deep in his blood. His grandmother was a Pettibone and lived on a farm north of Corvallis where a road still bears the family name. His great uncle, Kenneth Pettibone, almost tarnished that name when he conned the family into selling the farm, took the money, and ran off with a blonde girl. He was never heard from again.

Ed can flit from a poker-face deadpan to a hearty, wheezing laugh in the same sentence. Even while talking about his great uncle Kenneth and the family skeletons in the closet, he'd flash a smile and then hurl a laugh straight from his chest.

The Pettibone family came to the Little Willamette property near Albany around 1920. The previous family had settled the farm through a donation land claim and built a brick house in the 1860s, which still stands. The tall, reaching oak tree in Ed's front yard is also a relic. A descendant from the original settlers said her great grandfather was born under the tree.

Ed's father's side homesteaded by Buena Vista, where one-hundred-foot sandstone walls loom over the Willamette River. There, his father raised dairy cows. He was exceptionally bright and graduated from Oregon State University at sixteen. When Ed's father and mother married, they moved to Coos Bay and continued a dairy farm operation using small but productive cows. Then, McDonalds came along and small cows were of no use. The growing fast-food enterprise wanted big heifers to put into a chipper once they were done giving milk, and Ed's father couldn't compete.

Now, Ed lives on his mother's property on the Little Willamette, in the original homestead house (although an addition has since been made). Even though he didn't go into farming, he knows the Little Willamette landscape well. "If you look at the old photographs from '36, this place had a ton of wood on it," he says. Then, when the ryegrass industry got big, the wood was cleared because everyone wanted to pick up that extra acre. "In the seventies, the attitude was farm it or frame it," he said.

The other major change on Ed's land is that the Little Willamette once connected to the mainstem river and threaded across his and neighboring land. Parts of the channel have been farmed up, and it hasn't been open in "many moons," says Ed. But it does connect in areas during high water. The winter rains come, logs pile up in the remaining channel, the water backs up, and it floods. Different environmental groups have dreams of reconnecting the Little Willamette, which will let the water move through in the spring and provide a migratory passage for fish.

Ed offers a tour of the property. I put on my mud boots and accept with a smile. With no heirs to inherit his land, Ed worked with the Greenbelt Land Trust to put a conservation easement on the property and restore it. Restoration, like farming, is in his blood. He points to a grass field where his grandfather built a wetland in the 1960s. The wetland has since returned to farmland, but Ed plans to turn it right back.

Bigleaf maples crunch beneath our feet. We pass by a wetland that Ed put in a year ago, already full of geese. He's seen lesser yellowlegs, Virginia rail, Northern shovelers, bald eagles, and even a golden eagle near the wetland. He plans to keep it

open to benefit waterfowl. Take swans, for example. “They’re like 747s,” he says. “They have a long glide path and need an open area to land.”

I ask how does he or the Greenbelt Land Trust know what to restore to. How do they know for sure what was here before? Rather than pretending to have an answer, he says, “Who knows what this land really was one hundred years ago? All we’re really doing is putting our spin on it.”

Throughout our walk he shows me parts of his land and plans for it. Part will be oak savannah with native grasses and prairie plants. Part will be open wetlands to attract waterfowl. Finally, we stop at the edge of his property and look out to his neighbor’s field, where the Little Willamette used to flow and connect to the portion on Ed’s land. I’m tempted to ask why don’t we just reconnect it, but I know the reason why. The homeowners don’t want a channel permanently running through their field. It would chop their land in half. The channel is permanently dead, I thought.

I look out at the field, mostly mud with small sprigs of green. “You can alllllmost see it,” Ed says, his voice edged with fascination. He sweeps his hand near my face in the curve of the channel, perhaps hoping my eyes will pick up on the pattern. I humor him and say I see it, but I don’t. I see a field. A dead channel.

On our walk back to his house, the wind rocks through my digital recorder. Listening to it later, much of it is filled with the rhythmic crunch of leaves under our boots, the wine of air moving across the land, and spells of silence. I stay much longer

than I mean to, talking with Ed about nothing related to why I came. When the moment is right, I thank him for his time, and leave.

At home I pull up an aerial image of Ed's land, hoping I can see the former Little Willamette even though it's been farmed over for many years. And suddenly there it is: the shadowed mark in the land and slight depression where water once flowed. I look up and around the room, as if searching for someone to share this wondrous discovery. But I'm alone. So I keep staring at the drifting trail of the Little Willamette on my computer screen until the light outside begins to fade and evening settles in.

*The Buchanans, Tyee Wine Cellars (century farm); Corvallis, Oregon*

If I told the Buchanan story from start to finish with no detours, it would be no fun. It wouldn't reflect the way Dave Buchanan talks, either. Dave, who founded Tyee Wine Cellars with his wife Margy, is like an anxious stream that stirs in one direction and then another, ambling around boulders before joining the main current. So I will tell the story like the spindling creek running in his mind. If coyote scat or goose honk distracts us, rest assured we will find the mainstem story at a point downstream.

The first thing I should know, Dave tells me, is that there are two creeks, or "cricks" as he says, that come together on the Buchanan farm—the Beaver and Muddy. The Beaver flows into the Muddy, which winds to the Marys, which moseys to the Willamette.

We shuffle past a grove of filberts that he and Margy planted in 1974, the year they also planted wine grapes. Neighbors thought they were crazy to be farming for wine. Some ryegrass farmers wouldn't even talk to them.

We pause to listen to the cacophony of geese wading in a sixty-three-acre wetland he recently put in. From where we stand, the geese look like a brown smudge on a watercolor painting—focused enough to catch the eye, but far away enough to dim its reality. Then a flock above comes into land. A maelstrom of geese twists in the air, spiraling down in circles tighter with each lap around. Closer to the water, they coalesce into a single moving thing, a tornado with a will of its own. Then, the geese flutter and flap to break speed and kick up water when they land.

“Wow,” both Dave and I say. The geese are just one kind of bird Dave sees. In total, he has confirmed 149 bird species on his land.

I wasn't sure how one person could tell a 120-year story in a couple hours. But I ask how the Buchanans came to settle the land anyway. His poor Scottish ancestors went gold mining in Idaho before they had enough money to buy the farm. Dave gets distracted by a 243-acre wetland restoration project he put in more than a decade ago. Flags litter the ground where they planted Nelson's checker-mallow, a native prairie forb. Dave says some trees had to be removed to keep the area open and create continuous wetlands. But, he has more than made up for the trees removed. He figures he has planted more than 10,000 trees on the farm. On top of that, a thick line of riparian vegetation runs along Muddy and Beaver creeks, in some places up to six

hundred feet thick. “We have about one hundred-some acres of native woods that my ancestors never touched. They were either really lazy or had an environmental ethic. Imagine pulling out huge ancient oak trees with just axes, shovels, mules, and dynamite,” he says.

He goes on to explain that in the early days, land was free. The first wave of settlers came and then sold off parts of their land to a second wave of settlers, such as the Buchanans. After gold mining in Idaho, his ancestors finally had enough money to buy a farm. For 528 acres, his family paid \$7,939 in gold coins, which was a lot of money in 1885. The high price, Dave tells me, was likely because the valley was so fertile and some areas had already been cleared by Native American burning practices.

We cut onto a small trail on his property. In the 1950s, the Soil Conservation Service wanted to straighten all the rivers and creeks to increase farmable acreage, and because they thought it would reduce flooding. They offered the service to farmers free of charge. After straightening Beaver Creek, they started on Muddy Creek. But Dave’s father, an angler and hunter, thought the straightened creek looked ugly. So he stopped the Soil Conservation Service, thankfully before they carried out their plan to straighten the entire Muddy and Marys River Basin clear to the Willamette River. “I was really proud of him because that was a big thing for him to make that stand,” says Dave. He guesses that if the program continued, their 3.3 miles of meandering Muddy Creek would have been reduced to a mile or a mile and a half.

We emerge from the trail and come back to an orchard of hazelnut trees. Dave stops. “What the heck are those guys?” He peers through the binoculars. “That guy flying,” he points to a tall row of trees, (“Yeahyeahyea,” I reply) “That’s a peregrine...look at his wings, look how pointed they are. The way he flies, that’s how you tell what he is. He almost flies like a pigeon.” Peregrines will hunt ducks on his property. They’ll dive with speeds reaching 160 miles per hour and pounce on the duck mid air. He’s seen two separate diving kills while walking on his farm over the years.

I can’t believe how much Dave knows about this land. Part of it comes from being a fish biologist for thirty years, but most of it, I suspect, comes from just living it.

Let’s talk about floods, I suggest, and Dave agrees. “We flood out here a lot, partly because they straightened Beaver Creek. And now that it’s straightened, it just moves the flood downstream,” he says. He talks about the 1964 flood, when he was in college and courting Margy, and almost not being able to see her because of high water on the road. As a kid, shallow water would cut through their farm during high flows. He remembers rowing a drift boat to load up sheep in a far field and move them to higher ground. Dave also has rocks carried onto his property from the Missoula Floods that crashed into the valley several thousand years ago. Nestled in icebergs and then deposited onto the valley floor, the rocks are called erratics because they don’t fit the area’s geologic profile.

At the end of our conversation, Dave suggests I talk to his daughter Merrilee, who is now the estate winemaker and vineyard manager. Some weeks later, I catch up with Merrilee to talk about her experiences as a young farmer and growing up on a piece of land with so much family history. She has a different story to tell. As a child, she walked Beaver and Muddy creeks and caught cutthroat trout. Floods were simply a part of life. As the high waters moved in, they deposited rich alluvium onto the land, which is why there is at least one pasture the Buchanans don't have to fertilize.

But things are different now, Merrilee says. She doesn't walk or swim in the creeks anymore. They're not what they used to be, especially with fewer fish. There are new and potent poisons that farmers are using, and the uplands are being logged so water moves down slope at a faster rate, carrying fertilizers to the streams. Merrilee never remembers seeing so many log trucks pass by the farm. Besides the ecological changes to the land, there's not as much community among growers. She tells a story of her ancestors and surrounding neighbors all working the fields to gather hay. It doesn't happen like that now.

"Isn't it sad to see the loss of human and animal communities?" I ask

"Yes," she says, almost cutting off my question, maybe knowing it was coming.

It's a simple answer, but that's all she needs to say. Her steady eyes fill with tears. I could have looked away, as someone might do when a stranger shares such an honest moment of emotion. But I don't look away, accepting the fragile thing being

communicated between us. I catch her grief more strongly through this silence than I could have through conversation. And that's how the world would find us, if it were watching: two young women looking at each other with eyes full of tears.

*Peter Kenagy, Kenagy Family Farms; Albany, Oregon.*

The surname Kenagy—an altered spelling of Swish German *Gnaegi* or *Gnagy*—denotes someone who lives in or by his fields as opposed to in a village. Peter Kenagy honors his family name well. In his fields, which include a mile of riverfront land, he's grown native seed, a mix of vegetables, wheat, grass, and forest buffers to improve streamside vegetation. He's won awards for his innovative approach to improving soil quality, and sustainable agriculture groups have given him the nod for his early adoption of cover crops and strip tilling.

During the first part of our conversation, Peter and I sit and look out to his fields. I came just as the morning light splashed across the sloughs tracing his land, before the slicing cold had lifted.

His father's family acquired the first fifty acres in the early 1930s and grew pole beans, filberts, and gooseberries. Over the years, the Kenagys added to their acreage. An area with fir trees originally owned by a man named Sloper fell into his family's hands, and thankfully so. Sloper had dreams of turning his property into a motorcycle racetrack or even an airstrip. The piece of land with the sloughs running

across it used to be owned by the Nebergall Meat Packing Company. The meat packing company changed hands a couple times until the Kenagys acquired it in 1985.

Peter is calm and quiet in speech but restless in his movements. He would get up from the chair to look at something, then suggest we move into his garage. Then he'd sit down and stand up again—to look at geese in his field, to fetch an aerial photograph of his land, or to show me pictures. I suspect this is why he has been able to manage his land so well—he has the right level of energy for a daunting task.

He shows me photos his father took of Willamette River floods. In the 1940s, his father climbed the tall fir trees on the Sloper piece of property and took a picture looking out to Spring Hill near Albany. I thought the picture was of the ocean. All I could see was water. Another photo shows a rope tied from the barn to the house. Peter explains that his father tied the rope so he could travel to the barn and milk the cows, since the current was too swift to walk across. I imagine a man hanging from a rope, crossing one hand gingerly over the other, hoping he doesn't fall in.

How these floods changed his land, or all the ways the sloughs have been altered, Peter doesn't know. Looking at an aerial photograph, he surmises that the far slough running mostly parallel to the river once curved up to connect to the main channel. He also knows that one ditch on his property was blasted open with dynamite. It was dangerous work. A man died while clearing stumps on the property with dynamite.

We take a tour of his farm, and Peter details field by field how he got the land, his plan for it, and what he's growing. It's a lot of land for one person to keep track of. I keep having to re-affirm I know what he is talking about: "You mean the fifty acres your dad first acquired, right?" I would ask. Throughout his property, Peter has planted a lot of trees—firs and cottonwoods along one of his sloughs, which had been cleared for firewood by a previous owner. The slough may not look like much, but Peter says a fish biologist surveyed juvenile Chinook salmon in it. Peter would like to replace a small culvert with tidegates to allow high water to flow out unimpeded but retain continuous flow. This would improve fish habitat, Peter hopes. "Can you think of anything better than to have [Chinook salmon] restored?" He asks. "To have a lot of them in the Willamette again would be, I think, a crowning achievement."

Peter has also done a lot of restoration work down by the river, an area that had been heavily grazed by cattle. I sit on the back of a Honda four-wheeler as he shows me the work he's done over the years. We crisscross through black walnuts, ash, cottonwoods, through snowberry and Oregon grape. He shows me the invasives he battles too—not just blackberry and reed canary grass, but common tansy, false brome, and wild carrot. To him, invasive species are the biggest impediment to river restoration. He's also worried that agencies don't have the funds or plan to manage all the lands acquired for restoration. "The reality is, we as a society don't have the capacity to do all the restoration work that people think we need to do. We're putting the cart before the horse in some cases," he says.

By this time, I've talked with Peter for almost four hours, and it's two days before Christmas. I apologize one too many times and leave feeling like a nuisance and intruder. But the following week, Peter invites me to join two friends and him on a motorboat ride to see the Willamette's high flows. I am delighted at the chance, since I never float the river in the dead of winter with so much rain. We put in at Hyak Park near Albany and zip up and down the brown waters of the Willamette. Entire stands of trees are underwater, and an island I had visited in the summer near Half Moon Bend is nearly submerged. Peter and his friends seem to know every curve and juncture. We pull into Frazier Slough, venture around Truax Island, stoop between willows and twigs to check the backwaters. We go down the Little Willamette and explore Bowers Rocks State Park by foot. Trudging over wet blackberries with mean thorns, I follow behind these three men. They are looking for something, but what? Somehow, I can't keep up with the names and places they are talking about. The old Berger place. The abandoned gravel pit. Horseshoe Lake.

From the thick under growth, a small meadow yawns open. This clearing is the place they are looking for, I find out. Somehow, the meadow has no blackberries or big fir trees on it. Somehow, it has stayed open all these years. Has it ever been farmed? If no one is managing it, why is it not overgrown with trees and invasive shrubs? Was this once a gravel bar when the river flowed through here? Could it be untouched from indigenous burning practices? Could we have found a place preserved in the amber of time?

Without reaching a conclusion about the meadow, we slog back through the underbrush and back to the boat. The three men talk about who used to own what land, and when and why certain families left. They talk about how the sloughs have changed and filled up with silt, much like the Hornings did. I strain to hear what they are saying, but much of their words get lost to a cold wind. I want to lean in and listen, but somehow it feels like eavesdropping on three friends. It doesn't feel right to learn the stories from a simple telling, to rob them of a thing they earned through years of watching and running the river. But a part of me wonders if some stories of a wilder Willamette will get lost like that—muffled by a cold wind, silenced by time, sealed shut by forgetting, until the stories lapse into the dim recesses of a thing long gone. I catch what I can and thank them for the boat ride.

Back home, I realize what I was looking for in these stories about the Willamette. It's the same thing Peter and his friends were looking for in the meadow—proof that such a thing exists. It doesn't matter how the stories got there, or why they remain. My search for them wasn't about crafting a perfect map, but knowing the stories were there and could lead me to someplace new. Maybe some memories of the Willamette have already dried up, and others will disappear over time, but at least I heard a few tales about the place I live. Under stones, in the brush, in the fields, and in the winter waters resting in a slough, the stories rose up like atoms sifting into the air.

## The Grief and the Gladness

I made a new friend named Erika, and I was glad for it because new friends often don't have the gumption yet to turn down an invitation—which is why Erika agreed to go kayaking when I asked her. We had met in graduate school and enjoyed sharing research ideas and advice on what classes to take and what ones to avoid.

When I made the invitation to go kayaking, I came ready with a list of assurances: It will be flat water. We will wear life jackets. Ben will show me how to use our convoluted straps again so we can load and unload the kayaks. But I didn't need any of those assurances. Erika simply said, "When are we going?"

I suggested we take a short trip to a nearby place called Colorado Lake. We could go at the end of the day but before the sun went down. A river ecologist had told me the lake was a remnant channel of the Willamette River. Stranded ponds and lakes like the Colorado skirt the mainstem—ghosts of the river's once-complex past. Old maps show hints of channels and sloughs that once flowed near my house, like shadowy scars. The soil under my foundation—Dayton Silt Loam, Malabon Silty Clay Loam, and Waldo Silty Clay<sup>50</sup>—means the plain where I live was likely a wetland before settlement. This also means developers, farmers, and landowners buried the

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<sup>50</sup> Unites States Department of Agriculture. (2009). Web soil survey [Data file]. Retrieved from <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

Willamette's channels and wetlands alive by filling them with dredge sediment and building houses on top, leaving only a few scattered ponds.

When Erika and I arrived at Colorado Lake, we talked to a man with sapphire blue eyes. He told us we could use his dock, since there was no public access. We carried the kayaks down one at a time, dodging beer cans impaled on madrone tree branches and nodding to the man each time we passed.

Erika was a natural at paddling. She didn't need instruction and didn't get wet when she plopped in her kayak. On the water, she floated with ease, lifting and dipping her paddle in graceful figure eights, and twisting her wrists almost imperceptibly.

Curtains of late light draped the water. We watched a lesser yellowlegs spear bugs by the shore. Big plumes of algae topped the lake and covered our paddles when we lifted them from the water. Inside, I thought *if I were that man with sapphire blue eyes, I would be out here every day in a boat.*

Colorado Lake turned out to be pretty small and linear, so we'd float along the edge, drift for a time, and then turn around. The two of us paddled alongside damselflies with indigo bodies and white-tailed kites flapping through the air like prayer flags. We paddled and swapped stories—how Erika almost lost her husband to a mountaineering accident, the places she's lived like Chicago and Africa, and the stints she's had as an environmental activist. It was good to talk about something besides school.

With light haloing her apricot hair, Erika listened as I eulogized the end of raspberry season in my parents' backyard. My stories felt small in comparison to hers.

Edward Abbey writes that people naturally have a piece of land that calls to them. For some it might be a place far away, a foreign country filled with new people and cultures. For others, it might be a stranded pond that floats two friends. As we reached the edge of the lake, an edge that once extended to the main channel, I wanted to ask Erika whether a particular soil or smell of river calls to her, bone-deep, or whether she limps heavy with the weight of a particular place. But the timing wasn't right. We didn't know each other like that. Not yet.

Even though I was flush with words and thoughts, I was completely surprised by the silence that descended upon us, like cold night air drifting across a stream. Wrapped in the silence was the weight of something unexpected—a sense of things passing or things already passed, of places that were once pristine and others that will disappear in my lifetime. My heart filled with sadness that came from thinking about this lovely, stranded river, a place both beautiful and damaged. Holding our paddles against our bodies, we were carried to a place not spoken but felt. We glided through water, unmoored and drifting, and let silence do the talking.

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I was browsing for books at the library when a poster caught my eye. "Grieving the Gulf—We Gather to Bear Witness," it said. Intrigued, I read further and learned that a local church was hosting a ceremony to mourn the worst environmental disaster in

U.S. history: the Gulf Oil Spill. In the spring of 2010, a sea-floor wellhead blew out, killing workers and gushing oil into the Mexican Gulf. Every night on the news, pictures of dead birds with their blackened bodies and hollow stares flashed across the screen. Shrimpers were put out of business. A dark rim of oil was advancing toward the marshes. And thousands of miles away, a group was hosting an event to bear witness to the catastrophe. The gathering intended to give people a place to express their feelings about the unfolding ecological disaster and help them “move toward healing and transformation.” In all my time living in Corvallis, I had never seen a funeral organized for anything but a human being, so I decided to go.

I sat in the back row of a church, among a group of people who had gathered to grieve. Sometimes in pairs, sometimes alone, the griever filed in and prayed. They moaned, wailed, and knelt.

I went to the gathering hoping to catch grief from a nearby mourner in the same way you might catch a cold, as if grief could be felt and understood so easily. But my heart was armored with irony. The oil spill is catastrophic. It is sick, horrible, and obscene. It has killed birds, fish, shrimp, and oysters, and left communities without livelihood. Eleven people died from the oilrig blast and untold wildlife will perish from the 60,000 barrels of oil leaking into the ocean each day. I know this. But I could not pray because I could not find the words to speak of sadness even in the privacy of my own heart. I could not sing because I doubted the reality of my voice, paranoid that someone would detect my hypocrisy.

Here we were, mourning a loss caused by oil when most of us drove to the church without questioning it. And we will go home and turn on our computers and televisions and buy things shipped from places we can't pronounce. Won't this disaster take more than prayer? Is grief enough?

During a moment of silence to honor the victims of the oil spill, my mind chattered away. I could not find that silence I was looking for. No matter how hard I tried to quiet my brain, I could only think about one question: How do we grieve for the losses that we can't see, the ones that aren't like the death plume in our ocean but from long ago? What about environmental disasters that are right under our feet?

After the moment of silence, the church leader gave us a chance to express sorrow in our own way. People could write a poem, light a candle, put up a prayer flag, stay in their chairs, or dip their hands in water in a kind of blessing. I got up, avoiding a woman I knew, and shuffled in line to the water blessing station. I paid close attention to the men and women in front of me. They would submerge their hands for a moment, turn them over, then bring them up, sometimes touching their own forehead. When it was my turn, I tried to mimic the motions and reverence of the people before me, but I became too aware of the woman behind me. Was I doing it right? What was this ritual anyway?

At one point, I wanted to grab the shoulders of a crying woman and ask whether she grieves for the salmon in the Willamette Basin whose redds were dredged and spawning grounds drained. I wanted to ask if she thought about the floodplain

forest, once thick along the river, now a picket fence in many places. What about the great blue heron rookeries that became parking lots and homes, the ninety miles of lost river channels between Eugene and Albany, the displaced and dead indigenous people who were victims of disease and cultural fragmentation? What about the fox, lamprey, larkspur, and muskrat that have perished over the years? Surely these casualties surpass the ones of the oil spill disaster? Why aren't we sad for this loss? I could have responded to my own questions with a thousand answers: Because forgetting is easier than confronting, because other disasters bait our attention, because the Willamette's lost channels are an invisible wound, because grieving the Willamette might be an admission of guilt, because blaming faceless oil executives is easier than blaming ourselves.

Of course I did not grab the woman by the shoulders and ask her these questions. How could I? These things do not have the shock value of an oil-slicked shorebird or decimated marsh. And who knows how many animals my house has killed or displaced, since it was built in what used to be the floodplain.

Habitat loss is like an oil spill played out in slow motion—too sluggish for us to register any real threat until it's too late. Even when we replant the trees and the land looks healed, sometimes the web of life takes decades to recover. Sometimes, we don't heal the landscape and instead keep degrading it. More than ten years ago, scientists projected what the Willamette River Basin would look like in the year 2050 under normal, conservation, and development conditions. So far, we are cruising on

the development trajectory, filling more wetlands and losing more prairie habitat. This has and will cause cascading effects, from loss of biodiversity to altered water cycles. In many ways, our effort to control rivers increases the impact of floods. With fewer trees and wetlands to store water, the lag time between rain hitting the ground and entering the stream becomes shorter, which cranks up the river's power.

Standing among the oil spill grievors, I thought about the last time I had been in a church. It was more than a year ago, and I'd come to honor the death of my friend's father. Limb by limb, muscle by muscle, he lost the ability to move, swallow, and breathe until he suffocated to death. When I got the call from my friend that her father had died, I wept immediately. There was no thought, only feeling. The Willamette River suffered a similar fate. Settlers disconnected the river limb by limb and cut off its circulation. Atrophied and starved of oxygen, the river in some spots could hardly support fish life. When I learned this story, I did not cry.

After her father's funeral, I tried to comfort my friend by telling a Taoist story about Chuang Tzu, an ancient Chinese philosopher. When Chuang Tzu's wife died, a friend came to visit and found Chuang Tzu merrily singing. Puzzled, the friend asked how he could be so cheerful during a time of sorrow. Chuang Tzu explained that his wife was simply completing a cycle and returning back to where she came—back to a place of nonexistence. We don't grieve for people before they are born, he rationalized, so why should we grieve for them when they die? I turned to my friend, confident that my clever and profound story had uplifted her spirits. She met my smug

face with tears and said, “I don’t think I’m ready to be Chuang Tzu.” Her reaction stung me.

Maybe grief is a wretched yet necessary step to healing—a step toward feeling the featherweight of gladness again, and maybe the same is true for ecological loss.

When we were back in our seats, the church leader of the Grieving the Gulf ceremony invited us to make a sound to express our sadness. I let out a small whimper that I doubt even the man sitting in front of me could hear. A woman near the front let out a melodic moan that turned into a kind of song. I could not see her face, only her curly salt and pepper hair. As she began to sing, she tilted her head back and arched her song to the church ceiling. She raised her hands up one inch at a time, stopping just above her head. Her song thrummed and warbled slow and steady against the wood planks of the church. The sureness of her grief was mesmerizing. It came out strong and real. Instead of joining her, I pretended I had to go to the bathroom. I got up halfway through the ceremony, and drove home.

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Soon after the Grieving the Gulf ceremony, I stopped to listen to a man playing trumpet at the confluence of the Marys and Willamette rivers. I had seen this Trumpet Man before, wearing his clown pants. Sometimes he walked with a dented trumpet tied to his waist. It banged against his hip in rhythm with his step. Sometimes, two trumpets dangled from each side. Either way, he walked with his head up high, often

with a red, green, and gold Rastafarian beanie. Sometimes I'd see him by the river or in the used bookstore downtown. He was mostly alone and always walking. I don't know if he had a family or home to go to at night.

When he played, the Trumpet Man would face the river. He'd blow out raw and earthy notes that stretched across wet air, thick as a dirge. His songs were streaked with the sadness only the blues can tell—sadness you might feel for a stolen sweetheart, a broken dream, an oil-filled ocean, or a strangled river. Maybe he knew he stood at Shawala Point Park, which honors the Marysville band of the Kalapuya people.

Once, I asked the Trumpet Man why his songs were so sad. He just shrugged and kept playing. Another time, I stopped pedaling my bike and told him that he and the river made a nice duet. He shot me a puzzled look. The river pounded too loudly and drowned my words. I was beginning to wonder if he thought I was crazy.

This time—the time right after the Grieving the Gulf event—I did not ask the Trumpet Man any questions. I sat behind a highway pillar as darkness spilled over the land. Minor notes folded into a drawn-out melody, suspended across the wrinkled lines of the Willamette. The notes from the dented trumpet shuddered in a song that seemed not quite whole. The river, too, sounded with the trumpet in a pitch and pace different from what it used to be. Both played a dented song.

I have read that in some Aboriginal cultures, songs tell stories of the land, like audio topo maps. Each clan is a repository of songs that keep stock of the earth's

intricate grooves and bends, the swells and jagged edges. When the landscape is altered, clans still have the memory of places captured in sung storylines. I was thousands of miles away, both in distance and understanding of Aboriginal culture. And yet here I was, listening to the Trumpet Man's song that rang of a broken place. Songs are like testaments, keepers of knowledge, and teachers of sorrow. In music is memory, I suppose.

My hands grew cold as I listened to the trumpet warbling toward a depthless sky. I hummed along, adding in a few scattered notes. Hidden behind the pillar and with the dark masking all my insecurities, I found an unexpected boldness. I hummed louder until I could feel my body softly fluttering against the concrete pillar. Intertwined in the night air, a place where a symphony of stars patters the sky and a river drums seaward, the sound of trumpet and song curled upward. It arched toward blackness like a whisper of grief in the dark.

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It's been several weeks since our community grieved the Gulf Oil Spill, and almost a year since I kayaked with Erika. The nootka roses are losing their petals, but the air is too cold for the tarweed to come out. I take a walk to the river. The water is shoving and pulling downstream, still high from a spate of last-minute rain. Around a muddy bend, water skitters like a dog running broadside into a wall after taking a corner too fast. In the hawthorns by the bank, spiders weave spokes of silk into their webs, fine strands that match the sky's clouds. From above, a great blue heron makes a

distressing call and flaps dinosaur-like through the trees. His shadow trails the arc of his flight.

I walk with my head down and almost kick the ground with each step. The whole day I had been holding onto the most petty emotions and thoughts—the fact that I was edging toward 30 and hadn't even mowed the lawn. I was feeling crummy and myopic for spending so much mental energy on one river. Maybe we should be like Chuang Tzu and just accept the death of all things. What's one river compared to the desolation in the gulf, the destruction of a rainforest or a planet? What's one river when there are so many things to grieve? Maybe it's silly to mourn for the Willamette.

I keep trudging with my head down, too distracted to notice the things around me. Between breaths I step from shadow into sunlight and finally look up. The whole world crouches in a stillness I haven't felt in a while. Yet, there is so much movement—birds flitting, branches quaking. So much life. Even the deep hush comes with birdsong—the nasal cry of nuthatches, the creaking-door call of the towhee, the *wichity-wichity* of the common yellowthroat. What joy. The birds sing even when there are many reasons not to.

A river has a way of blunting worry in the same way it tumbles a jagged stone. If I had not stopped in this patch of sunlight and slowed to listen to this silence and song, I might have forgotten that the world can be many things—stillness and movement, quiet and sound, even grief and gladness. I might have forgotten that these things come unexpectedly, which is what makes them real.

Learning to grieve might mean learning to pay attention. Pay attention, and you feel. You begin to hear the land and learn its scars. Pay attention, and things beneath you become visible. In attentiveness we find unexpected silence to honor things lost, a song that holds the memory of the land, a patch of sunlight among shadowed forms.

I don't know whether we express sorrow best in silence with a friend, among strangers in a church, or in the dark listening to a broken song. But I do know that with friends there is also laughter, in church there is also rejoicing, and in the dark there is also starlight. There is always another side—a filling up with the letting go. Often the making of our life gets stuck under the shoulder of a stone, or spills into a dark pool. But even these deep places feel the splash of sun dappling the surface. Whatever grief is and however it comes, maybe I can at least hold on to this: Even jagged stones washed by current have a smooth side.

I stand in the sunlight for a long time before picking up a stone near the river's shore. One side is smooth and river kissed, the other rough. I hold the stone in my hand for a while, feeling the simultaneous soft and hard of it, and then throw it in the river.

## Trees, Weeds, and Rivers: The Work of Restoration

### *Trees*

The rain came as soon as I arrived to plant trees by the Willamette River. Everywhere I looked, other volunteers shrugged into jackets and shuffled to stay warm. I was fumbling with my gloves, putting them on, then taking them off to see what felt best. It's hard to grab a sapling and plant it with thick gloves. It's also hard to do it when the winter cold goes sub-surface and numbs your hands. I decided to go with gloves.

To plant a tree, you have to decide what belongs where. If it's a cottonwood that needs the water table to grow, you plant it by the river. If it's a Willamette Valley ponderosa pine—once abundant in the area<sup>51</sup>—you might plant it farther upland, although I have seen a variety that likes to get its feet wet. The best time to plant the tree is when the seedling is dormant, which, in the Willamette Valley, means during a time of likely rain and definite cold. Which is also why all of us volunteers were out here in wintertime, holding construction-orange buckets stuffed with saplings.

A volunteer coordinator corralled us to demonstrate how to plant a tree. He had that forest service look—evergreen jacket, black boots, tan hat with the bill in a perfect curve and official-looking logo stitched on the front. He told us that the holes have been pre-dug, but we'll have to deepen them since they've filled in after the rain.

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<sup>51</sup> Fletcher, R. (2007). *Willamette Valley Ponderosa Pine: A primer*. Retrieved from <http://www.westernforestry.org/wvppca/2008/WillametteValleyPonderosaPinePrimer2007.pdf>

He shoveled out mud with the speed and dexterity of a pro, plunging in the blade, bringing up mud, dumping it with a slight turn of the wrists, all in a continuous motion. Then he grabbed a sapling, placed it in the hole, and kicked in dirt with a deft sweep of his boot.

To plant a tree, you have to dig deep enough to hold the sapling's roots. You have to make sure the top root is covered with a healthy layer of soil. Then, you have to fill the hole back in and tamp it down with your boot or the backside of your shovel.

Today we will plant rows and rows and rows of cottonwood, ash, and Willamette Valley ponderosa pine to build up the Willamette's riparian zone and convert this pasture back to a functioning floodplain. The trees will provide habitat and stream nutrients, as well as prevent runoff from pouring into the river too fast and causing erosion.

I paired up with a thin, smiley girl with perfect olive skin, maybe in her mid-twenties. Her fine brown hair, bejeweled with silver raindrops, wisped around her narrow face.

We took turns shoveling and placing a tree in the ground. The gloves were already working against me. The sapling roots were tangled and twisted so that when I grabbed one, all the others came with it. Off with the gloves.

At first, each tree took us a minute or so to plant—it had been a while since I'd done this kind of work. We fumbled with the shovel while trying to find the exact hand position to maximize leverage. Some holes were narrow, which meant we lost

our leverage because we had to dig with the shovel nearly vertical. This also meant we had to shovel tiny scoops at a time, not like the deep, deft digs that the volunteer coordinator had shown us. Even with my gloves off, I had to untangle sapling roots from the bucket. With rigid kicks, we pushed the mud back into the hole, picking up a thick ring of brown sludge on the inside of our boots. Tamping down the hole was even worse. More of the mud stuck to our boots than stayed on the ground. Sometimes, our sapling was crooked (most of the time my fault), so we had to pull it out and start again. Then, after a few rounds of the same old thing (dig, drop, fill, tamp, repeat) we cut our time in half.

We finished one long bending row and started another, stuffing the cottonwoods, ash and pines into pre-dug holes, until we ran out of saplings. I slogged one muddy boot in front of the other toward the buckets still full of trees, loath to start again, wasting whatever time I could by talking to strangers: “Boy we’re making progress, aren’t we?” “You having fun in this rain?” Whatever it took to make this day go faster.

To plant a tree, you have to face the simultaneous sweat from labor and arthritic cold, the misery of toil, and the winter rain seeping into your bones. With planting comes mud caked so thick on the bottom of your boot that you stick to the ground, and an ache in your back from stooping over and over. Then, there’s the intense desire to wipe your face with a glove that’s already too dirty. The worst is

perhaps the sour stench coming from inside your jacket. I am usually careful not to lift my arms too high while working so I don't offend anyone.

My partner and I started on a third row and talked about our experience with restoration. This was her first time doing a tree plant, she said smiling. I didn't ask, but I wondered what she thought about this kind of work, or whether her smile really indicated happiness to be toiling in the rain on a Saturday morning.

Despite the wetness and cold, I soon fought overheating. Laboring under three layers will do that. I removed my hat, and sweat clumped hair across my forehead so it looked like a comb over, or at least I imagined it that way. I looked around, and people were mostly stooped and focused on the task, the robotic stuffing of trees. Dig, drop, fill, tamp, repeat. Dig, drop, fill, tamp, repeat. It all seemed so mechanical. What were we doing out here anyway, in the wet-ripe cold when we could be at home under a blanket?

Environmental philosopher Andrew Light<sup>52</sup> echoes the question ringing in my head during the tree plant: "Can restoration help engender...a positive normative relationship with nature?" he asks. Then he answers his question just as easily as he asked it: "It seems clear to me that it can. When we engage in acts of benevolent restoration we are bound by nature in the same sense that we are obligated to respect what it once was."

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<sup>52</sup> Light, A. (2000). Restoration or domination? A reply to Katz. In Throop, W. (Ed.), *Environmental restoration: Ethics, theory, and practice* (pp. 95-111). New York, NY: Humanity Books.

I had no doubt that restoration could engender a positive normative relationship with nature, and that it should, but I wasn't sure if the work I was doing could get me there. Was I missing something? Could a single episode of planting tree after tree in pre-dug holes form a valuable connection to the land? After the tree plant, many of us will probably go home and never think about this place again.

I wished instead that we would come back to care for the trees and watch them grow so we could feel invested in the success of the project. Relationships, after all, take time. Relationships also need context to help people understand the combination of circumstances and events that shape a person or place. This is why we like to know where people have been in their lives, to understand where they are going and how we might fit in with their future travels. It might be the same for the bottomlands we were trying to replant. I wished we could learn more about what this place used to look like throughout the last several decades, and what the people in charge hoped it might become. Some framework might give purpose to our actions.

Maybe nothing was missing from this experience, and instead, I just wasn't benevolent, attentive, or caring enough. If only I could have changed my attitude and forgotten about the immediacy of my whimpering muscles and focused on the long-term good we were trying to do. Can a normative relationship come with deliberate thinking, or should it come naturally?

Somehow, my tree-planting partner and I finished another row and started filling in random holes. "We're doing so good!" she exclaimed. It was the only words

we had spoken besides an interjecting grunt or sniff in at least twenty holes. We're close to the river but have run out of cottonwoods and ash. "Can we plant the ponderosa pines this close to the water?" I ask a volunteer coordinator, my brow knitted and voice reduced to the pitch of a begging seven-year-old. "Sure why not," he replied. Pity works. It was close to quitting time. We had planted lots and lots of trees. A few ponderosas down by the river wasn't the end of the world.

To plant a tree, or many trees in this case, you have to fight that urge to slow down and quit, that schoolyard temptation to slack off while the teacher isn't looking. You also have to fight the ache in the eyes, the well-known signal that your body needs food, sleep, or both.

With our buckets emptied, the volunteers re-grouped to finish the even less glamorous part of the work of restoration. I forgot to mention that to plant a tree, you don't just plant trees. You clean boots and buckets, sort shovels and gloves. You load and haul things up into work trucks and vans. By the end of the day, your back and arms are tight from bending over and shoveling. And if you don't switch arms while shoveling or loading, one side of your body will be screaming at you.

As it happens, I plowed through the urge to quit and the plaguing tired-eyes. My smiley partner and I took the same van back to where we parked our own cars or bikes. She said she was tired but kept smiling anyway. Either she was a good liar or had a lot more stamina than I could muster. I slouched in the van, turning toward the window to avoid conversation.

I expected to come to a profound self-realization about restoration and my connection to the landscape around me, to not just plant tree after tree, but to feel close to this place like an old friend. But all I felt was the faint tremor of muscles and that wonderful sensation of sitting down after a time of exertion. Maybe I lost the goal in the expectation and want of it. I slouched even further in my seat and pulled my hood over my head.

### *Weeds*

To pull a weed...now that requires a whole different mindset than tree planting. It requires an adversarial sense of what *doesn't* belong, an almost violent tirade against living things we're told to hate: Scotch brome, tansy, Japanese knotweed, teasel, Himalayan blackberry, Queen Anne's lace, knapweed, bull thistle, false brome, and more. Weeds with thumb-thick roots that don't want to come up. Weeds with seeds that can lay dormant for years. Weeds that crowd out native vegetation and homogenize streamsides. Weeds with stinky residues when you pull them. Weeds with dagger thorns. Weeds that insist upon being weeds, the unwanted of our landscapes.

One morning in May, I volunteered with a small group of mostly baby boomers and students to remove Himalayan blackberry at Dixon Creek, an urban stream that flows into the Willamette. This variety of blackberry can evoke ambivalence in western Oregonians. It perfumes the air with sweet berries in August, drawing pickers who want to make jam and pies. Often you see children emerge from

bushes of blackberries with syrupy smiles and purple-stained fingers. But Himalayan blackberries hedge miles and miles of highways, streamsides, and other disturbed ground. They take over yards and fields, spreading by the tips of their canes and by seed. In fact, Himalayan blackberry is one of the most costly weeds to manage in western Oregon.<sup>53</sup>

I had no feelings of ambivalence with my loppers, shovel, and grub hoe, armed at the ready for manual-powered shrub killing. This was not like planting a tree in the bitter rain. This was lopping, digging, and whacking before the spring sun arced over the alders and beamed down our backs. This was covering our skin to avoid getting pricked but accepting the sweat streaking down our underarms. The blackberries would cling to our clothes, releasing themselves only as we yanked free.

We got started almost right away, with just a brief talk on blackberries. Most of us, young and old—the grey-haired and graduate students alike—had pulled blackberries before, even in our own yards. To pull a blackberry weed, you have to lop off the canes and take away the threat of thorns before you can begin digging. Then, you dig down and find what I call the brain, the blackberry's knotty center with fibrous roots emerging from it. To kill the weed, you have to find the brain, unless you have a mega mower and a huge bucket of chemicals.

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<sup>53</sup> Oregon Department of Agriculture, Noxious Weed Control (2009). *Armenian blackberry (Himalayan)*. Retrieved from [http://www.oregon.gov/ODA/PLANT/WEEDS/profile\\_himalayanblackberry.shtml](http://www.oregon.gov/ODA/PLANT/WEEDS/profile_himalayanblackberry.shtml)

Without saying much (just occasional yelps of pain from the thorns), and with cold stares, I beheaded canes. *Lop lop lop*. I mostly kept to myself and worked alone. I dove into the maw of blackberries, a tangled mess of thick green canes. When I had lopped several canes, I'd pull them out from the thicket and throw them in a pile to be hauled away. Even when severed at the base, the blackberry canes looked alive and mean with thorns. Some canes had a clean cut when I lopped them straight off. But if I got the angle wrong and had to twist and pull with the loppers, woody tassels dangled from the ends. With enough lopping, our piles of beheaded blackberries swelled to a small mountain. Our kill count grew. I smiled.

The work, no matter how satisfying, gives me pause. Blackberries are not all bad. They provide habitat for birds, stabilize the bank, and filter sediments from streamside water.<sup>54</sup> Besides, to pull a weed means killing something. I was killing a thing (and enjoying it!!) so that something else could live. I had decided in my mind what didn't belong and what deserved to die. Somewhere, in the making of my morals, in all my genes and experiences, and in all the elements that had come together to make who I was, I had decided it was okay to destroy blackberries. And even if it's okay to pull a weed, should we also kill invasives with consciousness, such as nutria, carp, and starlings? What amount of death and destruction will we allow to repair the land? For example, do we eradicate them from our landscapes, even when they could

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<sup>54</sup> Bennett, M. (2007). Managing Himalayan Blackberry in western Oregon riparian areas. *Oregon State University Extension Management*, 8894. Retrieved from <http://extension.oregonstate.edu/catalog/pdf/em/em8894.pdf>

come back? Or do we kill enough to keep them in check? When I ask myself these questions, restoration becomes something more than science, or what's good for species diversity and richness, but about human values.

Restoration requires that people place worth on certain species, functions, and aesthetics. Native trees belong. Invasive blackberries do not. But placing a higher value on certain living things brings up another set of puzzling questions. If the landscape is always in flux, with things coming and going, then why do we insist on putting a top prize on native species? What is native anyway? How long does something have to be around for it to be considered native? Plants disperse by wind and animal, but for some reason people hate the ones dispersed by their own means. I'm not asking these questions because I secretly have an agenda about how we should restore the Willamette River and its floodplain. I really don't know.

Once we hacked down a patch of Himalayan blackberries, we got to digging. I loved when I'd pull a long root runner that would lead me straight to the brain. I made adroit, deft strokes with the grub hoe, then tried to uproot the thing with a shovel. But the blackberry was firmly wedged in the sun-dried dirt. I whacked some more. Expletives pinged across my brain, and there it was, that primal emotion called rage.

Mary Oliver writes in her poem, “For Example,”<sup>55</sup> that fury sometimes helps us to not feel overpowered: “some things have to feel anger, so as not / to be defeated / I love this world, even it its hard places,” she writes. I’m not sure I felt love, but I did feel anger that exasperated and inspired. *I cannot be defeated. I will not be defeated.* I hacked and dug, muscles flexed and jaw clamped tight, striking and shoveling in rhythmic strokes. I forgot about everyone around me and may have even been twisting my face in disgust. *Whack! Whack! Whack!* Finally, I uprooted the brain with severed shoots sprouting from it and lifted the dreaded thing above my head in triumph. If anyone were watching, I might have looked like Perseus holding the severed head of Medusa. *I win, you bullying blackberry.* Then, I looked over, and thickets of the beast ran the length of the stream—feet and feet and feet of it.

To pull a weed, you have to focus on the small wins. Otherwise, you will just get frustrated. You have to match the weed’s tenacity with your own. But this is hard to do.

A fellow volunteer stopped her digging and lopping. Like me she was a graduate student at Oregon State. With wavy auburn hair pulled back from her face, she wiped her forehead with the back of a gloved hand. In a breathy voice she exclaimed: “What kind of idiot brought these here in the first place?”

Indeed.

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<sup>55</sup> Oliver, M. (2010). For example. In *Swan: Poems and prose poems* (pp. 11-12). Boston, MA: Beacon Press.

*Rivers*

People are talking about reconnecting rivers. But I have no stories of this kind of restoration work yet. I have never toiled shoulder to shoulder with someone to connect a stream and have no idea what it's like. I cannot tell you about getting up early on a Saturday morning alongside other people to heal the land, or about the people and our conversations. I cannot tell you the thoughts going on in my head, whether channel reconnection is about what belongs and what doesn't, whether it's methodical work or full of malice. It could be all or none of those things.

But I imagine the work is more sophisticated than anything I've done. Beyond toil, there is modeling, data collection, and engineering. People simulate flows and calculate gradients. They look at historical maps and flood regimes, comparing them to current data and maps generated from remote sensing. They model and map in hopes that these off-channel habitats will allow aquatic creatures to hide from predators, find shelter from swift current, and rest in the cooler water during the warm months.

I've been reading and hearing more about rebuilding channels. The Freshwater Trust, a local environmental group, put in a series of five alcoves at Woods Creek, a stream west of Corvallis in nearby Philomath.<sup>56</sup> The Little Willamette, the channel I traveled down with Peter Kenagy and his friends, is one potential area that environmental groups would like to re-connect to the mainstem. In another project,

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<sup>56</sup> S. Green (personal communication, June 21, 2010)

Willamette Riverkeeper and other groups have been trying to reconnect nearly two miles of remnant channel and oxbow lake to the river at Willamette Mission State Park.<sup>57</sup> For now, the project has been halted because of opposition from neighbors,<sup>58</sup> but if the plan were to go forward, the riverkeeper would remove three man-made barriers and sediment from the remnant channel to open it up. They would use bobcats and tractors to scrape and dig. The earthmovers that built roads and changed our landscapes are now being used to put the earth back.

Even though I don't know how to reconnect a river, I fear there is a terrible dilemma at work here. The bulldozers puncture and scrape the land. They kill, rip, and destroy, sometimes indiscriminately. They could scoop out earth to reconnect a stream, and maybe the water will fill the new channel, but if the river decides to flow somewhere else, fish and other aquatic animals could become stranded and die. If the bulldozers can't get around the trees, maybe they rip them out. There can be an awful amount of destruction for restoration, but no one seems to be talking about it. Restoration workers, including me, rip and pull without question.

A farmer once gave me a tour of a thirty-acre restoration site where he and a friend had mowed all the blackberries, reed canary grass, and common tansy to prepare for re-seeding with native plants. I commented how often we destroy things in

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<sup>57</sup> Willamette Riverkeeper (2008). *Mission Bottom channel restoration*. Retrieved from <http://www.willamette-riverkeeper.org/WRK/documents/mission-bottom-channel-restoration.pdf>

<sup>58</sup> Hall, B. (2011, January 16). Farmers make a stand. *Corvallis Gazette-Times*. Retrieved from [http://gazettetimes.com/article\\_24e57eeb-dc56-5260-b3db-042b0f631785.html](http://gazettetimes.com/article_24e57eeb-dc56-5260-b3db-042b0f631785.html)

the name of restoration. Without skipping a beat, the farmer nodded firmly, saying that restoration is like remodeling a house. You knock down wall. You make a mess. You go backwards before going forwards.

At least someone was being honest about the work.

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Planting a tree, pulling a weed, reconnecting a river. The varying acts of restoration bring up fundamental questions of what the practice really means. If restoration means something more technical like channel reconnection projects, then how can ordinary people who are not hydrologists or engineers get involved? If planting trees and pulling weeds qualify as restoration, then I wonder how to take it beyond a judgment of what species belong, and toward an exploration of where landscapes belong in our lives, and indeed where we belong in them. Pretending for a moment that planting trees, pulling weeds, and reconnecting rivers all constitute restoration, then I think some discussion needs to happen on what we are trying to restore to. If restoration means returning the land to a previous state, then we must decide a specific time that we value over others, even when nature changes every moment.

A friend of mine once suggested the word restoration is a misnomer because the thing being restored will never be what it was, meaning we can't go back in time. When you darn a sock, the sock may have the same function and appearance as before, but it is NOT the same sock. For this reason, he never uses the word restoration, but repair. If repair is a better word, then when I plant trees, I am not really returning to a

pre-European settler landscape. And when I remove blackberries, I am not going back to before the damn weed was brought to the Willamette Valley. I'm repairing the land to return similar function, but the land itself is not what it was. I like the idea.

Okay, so if restoration doesn't mean going back in time, suppose it means returning function and process back to a system. We plant trees for habitat, erosion control, flood storage, and a nutrient source for the stream. We pull weeds to create complex habitats that favor threatened species. We reconnect channels to restore floodplain function and create refuge areas.

I wonder what role humans might play in restoring those processes and functions and ensuring their future success. If restoration means creating a place free of human disturbance, then we must consider whether it's right to intervene in the name of restoration. If, on the other hand, we restore with an understanding that humans are also part of the landscape, then perhaps we don't need to restore at all since even our destructive actions could be considered natural. All my toil in planting trees and pulling weeds would be unnecessary. Of course this last argument is ultimately destructive. But, still, it makes me think.

More than once, I wonder if we should be questioning the *why* of restoration. And really, the why of restoration might be an extension of what it is. Maybe we can make progress on what restoration means if we understand its purpose.

So why do I go out in the rain and heat, alongside strangers and people I may never see again? I have a few theories. 1.) I restore to feel good about it, even if it's

the perfunctory, repetitive actions of tree planting, or the aggressive nature of pulling weeds. Paying my dues will give rise to a smug satisfaction of having done my work for the world.

2.) I do it out of personal guilt. As I have mentioned, my home is in the floodplain. A neighbor has told me that the Minty family farmed and then developed the land into my neighborhood. I have seen the development agreement between Benton County and Vica and Chester Minty from the 1940s. So the Mintys got rich by farming the wetlands and then developing their acreage. One of the Minty descendants, Barbara, was a super model who married racecar diver extraordinaire, Steve McQueen. Barbara is both beautiful and rich, and the river is impoverished. I know that my house has buried wetlands and channels alive. In reality it shouldn't even be there, and perhaps hundreds of trees were cleared for my neighborhood. In some way I feel obligated to right a wrong and replant the trees that were cut down for my comfortable living. I did not wield the ax. I did not fill the wetlands and sloughs, or light the fuse to dynamite the stumps. But I am benefiting from those destructive actions by living in the one-hundred-year floodplain, which really would be the ten-year floodplain had we not regulated the river so much.

3.) But the reason I hope that I'm restoring is beyond ego, guilt, or a quid pro quo exchange. I'm hoping that the experience and others like it will build a relationship with the land, the kind that Andrew Light talks about. I've read that this is what restoration is supposed to do. It's becoming a common narrative among

conservation groups. Get the kids outside so they can experience the land and form a connection to it. Get people working with the earth so they feel invested in its health. Writers, thinkers, and environmentalists have explored the topic too. Writer Stephanie Mills says that what restoration should be is the transformation of our souls. We work with the land to restore a feeling of “awe in something besides our own conceits.”<sup>59</sup> Scholar Gretel Van Wieren writes, “In the actual activities of restoring land, humans are in important ways restored to land.”<sup>60</sup>

Nearly seventy years ago, Aldo Leopold wrote a profound book that reflected on the human-land relationship, perhaps as deeply as any other environmental text. He writes that the virtues and respect of the man-man society should be indistinguishable from the man-land society. That is, our community ethic should not only include people, but place: “In short, a land ethic changes the role of *Homo sapiens* from conqueror of the land-community to plain member and citizen of it.”<sup>61</sup> Leopold reflects on the quality of our actions and state of mind, concluding that we need love and humility in our *perceptions* and *interactions* with the land.

Even the wisest of environmental writers tells me it’s possible to restore an ethic of concern for the land. What this relationship looks like, I don’t know. How and when does it come? I also don’t know. But I keep going out to help the Willamette

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<sup>59</sup> Mills, S. (1995). *In service of the wild: Restoring and reinhabiting damaged land*. Boston, MA: Beacon Press.

<sup>60</sup> Van Wieren, G. (2008). Ecological restoration as public spiritual practice. *Worldviews*, 12, 237-254.

<sup>61</sup> Leopold, A. (1949). *A Sandy County almanac and sketches here and there*. Oxford, UK: Oxford University Press.

River. I pull, hack, plant, shovel, and tamp. And in whatever way I engage with the land, I search for this third reason, to feel the work of restoration in the ache of my hands and ringing of my heart.

## The Daily Braid

9/20/2010

Against a grey sky, the only obvious color is the screaming orange of our life jackets. Stray paddles and straps litter the dew-washed ground, and four deflated rafts sit like wrinkled skins waiting to be pumped up. A dank cellar scent clings to the air, a smell all of us will come to know deeply in the next four days. We are students from Oregon State University and the University of Oregon. Some are barely old enough to legally drink. Others are entering second careers. Some are self-described fish squeezers and river rats, while a few have never gripped a paddle. We gather under this gloomy damp sky to learn about restoration on the Willamette River. When I signed up for the joint OSU-U of O course, called *Introduction to River Restoration and Planning*, I wanted to understand what restoration meant to policymakers, farmers, scientists, and thinkers young and old, and how to weave together these different ideas into a more complete picture of the Willamette than I could draw on my own. But I had no idea of everything we would explore during this four-day raft trip along the Willamette's mainstem.

I know a couple people on the trip—one friend whom I've been fortunate to have class with every term since she started her program in water policy a year ago. Another, I met during a different field course. Otherwise, these people are strangers to me.

Our launch point is Armitage Park just north of Eugene. The U of O Ducks and OSU Beavers keep to their own kind, and we pack our sleeping bags, tents, dry sacks and day bags in rafts with heads lowered and the same awkwardness of a first date. Better to avoid eye contact than get caught in an accidental conversation with a stranger. Somehow, through nonverbal cues, we divvy up tasks. The students who look like former river guides, the ones who brought their own life vests and wear hats with fly-fishing logos, inflate rafts and strap in metal frames with ease and dexterity. Others move coolers from one place to another in order to appear busy. The naïve enthusiasts, such as myself, try to help with tasks outside their knowledge. Right now I am trying to unweave a strap that someone has looped into a beautiful, intricate knot. Then, a fisheries and wildlife student shows me how to undo it by simply tugging on the end. “Oh. Thanks,” I say, keeping my head down. But I have to give him my attention, because he’s showing me how to weave such a knot. “You make a loop, and then a loop...” he says, curling the strap upon itself in rhythmic sweeps. “Ohhhhhh, okay,” I say, feigning comprehension. “I think I can do that.” I lie.

Soon we gather in a circle, standing far enough apart to not touch elbows. It’s always the same: name, program, and something about yourself—this time, something we like. Most of the University of Oregon students are in the landscape architecture program, and many like gardening. The OSU students come from engineering, water policy, water science, environmental science, and fisheries and wildlife, among other disciplines. Somewhere between a blonde-haired girl and a guy with glasses, I stop

listening and think about what I will say. It's my turn and I say the last banal thing my brain lands on: My name is Abby Metzger. I'm in the environmental sciences master's program at OSU. I like writing and fantasizing about what my life will be like after graduate school. The last part spurs some courtesy laughs.

After a brief talk on river safety, we hit the churning green waters of the McKenzie River, a major tributary of the Willamette. Four rafts caravan with the current, strung together by an imaginary leash and zigging along the axis of highest velocity, which I learned is called the thalweg.

In my boat, I am fortunate to have guest speaker Joe Moll with the McKenzie River Trust and Stan Gregory, a fisheries and wildlife professor at OSU. The two volley information about the Willamette River Basin, and we all listen intently. I learn that 40 percent of the water flowing under the bridges in Portland comes from the McKenzie River, a fact that, despite our tendency to compartmentalize the natural world, confirms the linkages between waterways. Most of us think of the Willamette as the main channel, but, as I am beginning to realize in the short time I've been in this raft, it's also the water beneath the corridor, the rain, upland habitats, the tributaries, the mists rising over the coastal hills, the clouds sliding down the ridge of the Cascades. Reaches are not segmented and tributaries do not behave as independent limbs. Eugene flushes and Corvallis opens up the tap, Stan says, which is a more scatological way of saying we all live downstream.

In places the river kicks and swoops around fallen trees, and we have to dig our paddles in to avoid going down a wrong channel or slamming into riprap. Initially, we are out of synch, slapping each other's paddles or inadvertently splashing one another. On top of that, my life jacket, which keeps riding up despite being cinched tightly, makes me feel like a turtle slinking its neck into the safety of its shell.

Stan politely gives us commands: *all forward*, *left forward right back*, or *dig dig dig*. With enough practice, we paddle through water stippled by white-capped riffles, all of us heaving together in rhythmic strokes. Another group isn't as lucky and loses a passenger off the side of the raft. Since our boat is the leader, we don't see it happen, but apparently, two students hauled him back in, and not a moment after, he was smiling but sopping wet. Nothing like a little danger to break the ice.

A few times we have to get out and portage through shallow water, but it helps that we have Randy, an OSU Fisheries and Wildlife researcher, as our scout and equipment schlepper. Several times, he glides ahead in his motorboat, saddled with thirty-some backpacks, and reports back on the channel conditions so we know what to avoid.

Joe with McKenzie River Trust points to landmarks along the way. One is a tall cottonwood gallery forest growing inland—a former channel of the McKenzie, Joe tells us, his blue eyes peering from under the curved rim of his hat. The floods came, rearranged the river's course, and spun it in new direction.

The drone of gravel mining operations pollutes the soundscape as we paddle by Confluence Island—named for the confluence of the Willamette and McKenzie rivers. To feel the difference in temperature, Joe has us stick our hands in the McKenzie and then Willamette as it flows in. The Willamette is warmer—in places too warm to support native fish. Sight may be our strongest sense, but touch can tell a truth our vision hides. Feel the river. Touch it. Smell it. That’s how you’ll come to learn what it is.

A few miles downstream from our launch point, all four rafts pull over on a gravel bar adjacent to a backwater area where a small native fish called the Oregon chub has recently been found. Stan tells us chub were once common up and down the river. But since they require slow moving, complex, and heavily vegetated areas, chub have been reduced to isolated pockets. If we want to restore the land to increase fish populations, we would have to re-create these complex habitats. That might mean planting trees, reconnecting channels, or creating alcoves and sloughs with backhoes, not to mention a lot of modeling and engineering. Landowners next to a channel reconnection project might resist. The re-channeled water could flood their property, cut into their land, or reduce their acreage and income. Restoration, even when coming from a place of good intention, can have unforeseen consequences.

As Stan tells us this, I see everyone’s faces growing more perplexed. Some stare or furrow their brows. As students in environmental and ecological programs,

we're told restoration is always a good thing, but suddenly the picture is growing more complex. There are more strands in this knot than the environment.

There are many things about the river and restoration that I have yet to learn. But it's nice to know that I am standing in a circle with other students, on a gravel bar, next to the Willamette, wondering how to restore this huge, powerful river. And I do know that people are framing restoration in new ways. Joe says we shouldn't restore to meet the minimum requirements of ecosystem function, of beauty, of habitat, or whatever other aspect we're trying to restore. We should restore for wealth. Why shouldn't we go beyond marginal solutions and try to repair nature's riches? This is why we have imagination of course, to plunge the deep reaches of possibility.

After a good twenty minutes of discussion, we offer our silence to the river. I hear the drone of sand and gravel machines, the furtive chirp of song sparrows. I smell the trailing scent of pine and sweat, and finally I feel a deep swell of something in my chest. I am glad to be among these strangers floating downstream.

We are getting hungry and stop at Green Island, a parcel of land undergoing restoration efforts spearheaded by the McKenzie River Trust (MRT). A light breeze waves through the grass. We sit and eat our lunches on an open swath of land in a circle that seems tighter than our launch point a few hours ago. Here, countless people have planted more than 50,000 native trees and shrubs, re-converting more than two hundred acres of agriculture field back to floodplain forest. In addition, they are

improving seasonal links to sloughs and river alcoves. A huge levy once disconnected the river from the floodplain, but MRT workers removed three Olympic-sized pools of sediment and material to let the river back in.

It might seem counter-intuitive to let a river spill onto adjacent land—why would we ever value a flood? For one thing, Joe and others from MRT explain, connecting a river to its floodplain flushes out sediment and refreshes spawning areas for fish. Side channels also provide natural areas for the river to store and dissipate its floodwaters. Once the water recedes, nutrients from the land enter into the stream system and benefit aquatic animals.

I ask Joe if what they are trying to do here is go back in time. No, he says, confirming my own belief and what others have said. You can't really go back. The goal is to restore function and process, in this case by allowing the river access to its floodplain.

I thought about how the MRT may not realize the full return of their laborious investment for decades. Think about the thousands of trees they planted. They won't be full grown until the person who planted them is likely gone and passed. The thought reminds me of when I planted trees with middle school students on land near the Little Willamette. As we were cleaning up, one student lingered behind, and I assumed she was goofing off. I went to get her, and saw her crouching around a cottonwood sapling, carefully patting the dirt until the tree was absolutely straight. So

much care for a tree that might outlive her. So much care for a tree she might never climb or see fully-grown.

It's strange that we pay this kind of sweat equity toward the future promise of ecological healing. Some environmental philosophers, like Eric Katz,<sup>62</sup> have argued that we do this out of arrogance, thinking we know nature well enough to rebuild it. Under the guise of helping the land, we are really helping ourselves and repairing landscapes to reflect human values. But I think these philosophers are framing their argument in the same human-centered worldview they are criticizing. They are thinking of restoration in human timescales. The act itself *is* marred with human design and intervention. But will there be evidence of our forgery in 500 years, 1,000 years, or 10,000 years? Imagine Green Island overgrown with tall, stooping trees and a thick understory of snowberry and deer ferns. Imagine it with quiet pools and alcoves with a western pond turtle stretching its neck to greet the morning sun.

Restoration is not a single act at all, but part of a continuum of healing that carries on long after we are dead. We plant a gallery forest in the knowledge that we will never run through it, but that a river may. This requires a humble awareness of our connection to and dependence on the earth. This means caring for the land and its future inhabitants. There has to be room for wonder and love of landscapes, the sense

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<sup>62</sup> Katz, E. (2000). The big lie: Human restoration of nature. In Throop, W. (Ed.), *Environmental restoration: Ethics, theory, and practice* (pp. 83-93). New York, NY: Humanity Books.

of something larger than ourselves. If not, what will stop us students from getting out of these rafts and not caring? Just pull the string and the knot comes undone.

The first night we camp on Blue Ruin Island. The one friend I know on this trip surveys the island with me. We brought tents but decide to sleep out in the open, even though we know the dew will slick our sleeping bags. We know this because two weeks ago, we slept without tents on a different island on the Willamette and woke up with dew on our eyelashes.

Randy, our scout and equipment manager, shows us what he calls a beaver superhighway—a long narrow path with dozens of prints and flattened areas from where beaver have dragged sticks and tails. My friend and I smile at each other. We find a small plateau adjacent to the superhighway and stake our sleeping claim in hopes of spying beaver during the night. We won't see any, but loud tail slaps will startle us awake more than once.

Darkness arrives suddenly. Around a fire, our bellies full of pasta, Stan tells the story behind the island's name. In the mid-1800s, a man named Woody made a name for himself by opening a saloon on the Willamette's west bank, a couple miles north of present-day Junction City. Soon enough people gathered in and around his saloon that the area was known as Woodyville, also the location of navigation port Woody and his family operated. On account of his reputation for hardscrabble toughness, Woody dispensed a local distillation commonly known as Blue Ruin. He

lived his reputation well, with a large and unwholesome family who competed with other navigation companies through bullying, intimidation, and even sabotage.<sup>63</sup>

I want to listen more, but the grogginess that comes with exhaustion visits me at closer and closer intervals. Everyone else is silent too, heads resting on hands and eyes trying to stay open after an entire day of paddling.

My friend and I head toward our plateau near the beaver superhighway. Above, the Big Dipper ladles a scoop of darkness, spoiled only by a beam of moonlight flickering under clouds. We have been out of the water for hours, but somehow, even in stillness, I feel the river's gentle rush and rock around me. The power of its sway grows wide. So wide that I can no longer tell where it began.

*9/21/2010*

My alarm startles me awake. My fingers are swollen from the heat of my sleeping bag, and my brain is foggy from the open cold. I get up and shake off my bag. "I swear I heard a beaver chewing willow sticks right by my head," I say to my friend. She replies, "I could almost hear them walking right by us." Sure enough, fresh tracks pit the beaver superhighway. We giggle and laugh like schoolgirls.

It's 7:30 a.m. and we are packed and dressed, which turns out to be easy because we wear the same thing we slept in. Walking toward the group, we are surprised to see most everyone awake and huddled around a fire with thermoses in

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<sup>63</sup> Corning, H. M. (2004). *Willamette Landings* (3<sup>rd</sup> ed.). Portland, OR: Oregon Historical Society Press.

hand. The nearby air smells of wet duff, fire smoke, and coffee. People talk about what they hope to do after school, while Stan, Dave, and Randy share stories of research trips on the river and gear they lost to the current. It will be another hour before we clean everything up and get on the river again.

Today I sit on the other side of the boat so I don't burden my already-sore muscles from yesterday. I'm with a different group of people and a new guide—the same fisheries and wildlife student who showed me how to knot the raft strap.

Our first stop is a large gravel bar along the banks of a small town called Harrisburg. Where the gravel bar meets the shore is a stranded boat ramp. The city installed the ramp to improve river access, but over time the Willamette deposited a swath of stones and blocked the ramp. We talk about what the city could do to regain river access. They could mine the gravel bar and use it for concrete. They could dredge it and deposit it elsewhere. But the river would just bring it back. Often we treat systems as symptoms. Symptoms can be “cured” but a system cannot—at least not entirely. Deposition of gravel is part of a system and just something a river does.

We can, however, interfere with the system. Stan tells us that summer flows are now 2 to 2.5 times higher than historic flows. The Army Corps holds water back during the wet months and releases it during the warm months. In addition, one river mile today along the upper river, the area we are floating, was around five to six miles before settlement.

We can only interfere so much before the river says enough, which is what happened with Harrisburg's boat ramp. The town might be inconvenienced by a landlocked ramp, but the shallow water by the gravel bar can be great habitat for juvenile Chinook salmon, says Kirk Schroeder with the Oregon Department of Fish and Wildlife. He, along with Michael Pope from the Greenbelt Land Trust and Steve Horning, the young farmer of Deerhaven Farms I interviewed, will accompany us along the next stretch of river.

The day flickers between sun and grey, and in a similar fashion, the shoreline changes from forty-foot willows and ash, to areas cleared for farmland. One inside bend will be covered with bright green grass with the long necks of heron sticking out like spy scopes. The next will be a row of Christmas tree crops overhanging a steep bank, with roots clinging to the sandy soil. Throughout this stretch we see distinct layers of soil and rock in the bank and learn that the very bottom layer is likely from the Missoula Floods, the same floods that deposited "erratic" rocks on Dave Buchanan's land. Geologically speaking, it is possible to go back in time.

We're not on the water long before pulling out to eat a lunch. With food in hand, we circle around Steve Horning.

Steve has an easy manner about him, answering any and every question we throw his way. His well-kept hair and collared shirt give him more of a college-boy

look than farmer, which might be from the time he spent at Western Oregon University and Oregon State University before coming back to the family farm.

Restoration, Steve tells us, can mean losing productive property to the river. Reconnect a channel, and it may flood the land. Remove the riprap, and the river could migrate and take out trees. But more than that, planting native vegetation can send unwanted seeds downstream that infiltrate adjacent fields. Restoration can reduce the tax base and require costly adjustments for the farmer such as repositioning their irrigation system. The permitting process can be long. Dozens of agencies can be involved. Years can pass before any of the restoration work begins.

But I don't want to paint Steve as an anti-restorationist. Far from it. Deerhaven Farms is working with Greenbelt Land Trust on restoring 320 acres near Harkins Lake. "We believe that it only makes sense to benefit the environment and your pocket book at the same time," he says.

Steve says that scientists survey fish by the farm twice a year, but he has never been surveyed. No one has taken the time to ask his opinion or hear from his family, a family who has watched the river change for one hundred years. His comment struck me, and maybe all of us in the class. Restoration is so often framed as an ecological issue, but it's a social one as well. The work is not just about fish but farmers too. There are more strands knotted together than I ever imagined.

We finish the day by paddling down to Irish Bend, our final destination. In a flurry of movement, we deflate the rafts, roll them up, and haul them into a white van. Tonight, we'll stay in Corvallis, which for me and other Oregon State University students means we'll be sleeping in our own beds. I let my shoulders down at the thought. My ass is wet and arms are tired.

The night before I had slept on soft river grit and drifted into a dreamstate punctuated by beaver tail slaps. Tonight, I fall asleep next to Ben. The only sound between us is the slow cadence of our breath, each one becoming something more imagined than real.

*9/22/2010*

Ten hours later. I'm in the white van again with companions who are becoming more familiar each day. They are no longer outlines of people who study landscape architecture and enjoy gardening, but people who are asking intelligent questions about the place they live. How can we pull back our infrastructure and let the river breathe? Why aren't more salmon swimming up the Willamette River and migrating into coastal streams? How *do* you restore a big big river like the Willamette?

We begin the day's journey at Hyak Park near Albany, where we meet two new guests, Pam Wiley with Meyer Memorial Trust, and Paula Burgess with Oregon Watershed Enhancement Board. This time we set up the rafts with laughter and jokes, despite our tiredness. For the third time, I hear the story about a student falling out of

the boat on the first day, and a group of us laugh in remembrance. We haul gear out of the vans by forming a line and passing along equipment like a human conveyor belt. The rest is familiar: we pick a paddle and a life vest; we carry inflated rafts down to the water, along with our day bags and coolers; and then we gather to hear introductions from our new guests.

Pam and Paula launch into a discussion on restoration on the mainstem Willamette, an area that until recently has been avoided. Not because of apathy. The mainstem is simply a huge river with a lot of power. In addition, some projects, like channel reconnections, require complex and expensive modeling intended to determine how rivers behave over space and time. But for all their sophistication, models make one huge assumption: that a river never changes. Facing the group with the catcher's mitts of bigleaf maple leaves pawing his head, Stan asks the group: Can one model measure how a channel reconnection will affect birds, terrestrial species, etc, over many, many years? On top of that, I wonder, can a model grasp the complex relationships people have with the river?

Then, Stan talks about something I had never thought of. He suggests letting the river do some of the work and giving it freedom to self restore. We can bring in the backhoes and lengthen an alcove, but let the river lengthen itself as well. The river is a participant in restoration too.

The group fidgets. Some sit, shift position, cock one hip and then the other. For my part, I'm ready to be on the water again. It's already 11 a.m.

The current along the middle stretch dabbles rather than drums, half unfamiliar from its quickened pace above Harrisburg. In a way, there are rivers within rivers, disaccord and change between reaches, permutations of patterns becoming something new. The whole world can change in a few paddle strokes. Pay attention: farms become fields of cottonwoods, bridges span concrete banks. Look sharp: a palatial home gives way to an empty osprey nest on top of a telephone pole.

This stretch I'm in Dave Hulse's boat, the other instructor from the University of Oregon. The students are content to let him tell story after story about the river and surrounding people.

One story sticks with me, and I have already retold it many times. As we pass Bryant Park where the Calapooia River comes in, Dave points to a clearing. Until recently, 150-year-old cottonwoods stood there (Randy counted the rings). Dave, Stan, and Randy surmise that the floods in the 1860s laid down the cottonwood seeds. The high waters that ripped through the valley and destroyed property also created something new: a patchwork of saplings that grew and watched Albany expand over the years. They saw the introduction of the railroad, the remaining natives shoved aside for progress, and the slow atrophy of a river choked by progress. It's amazing that something we consider so destructive can also bring renewal. But all the history wrapped in those 150-year-old trees died when the city decided they were a hazard

and cut them down. If we had passed by the clearing at Bryant Park without the story of the cottonwoods, I would have mistaken it for a simple patch of grass.

Stories of landscapes bring meaning to our lives. Before the advent of written communication, before books and blogs, people told oral histories, crafted and recited in place. Now, our stories are traded across countries. They grow in one place and are told or read somewhere far away. There is nothing wrong with globalizing our stories through written language, but I think it's important to learn about the stories under our feet. Those stories have special meaning. The hill in our backyard or brook running through town has a unique genesis. Learning the history behind the local natural world attaches meaning to the places we experience daily, until that hill or brook become something more than a namesake. They become woven into our lives as ongoing characters in our narrative.

We eat lunch on an island and listen more to Pam and Paula. They are truly champions of the Willamette. They go through the exhausting permitting, approval, and funding process of restoring the mainstem. My head spins with all the acronyms and approval boards, grantees, agencies, and advocacy organizations involved in the restoration process. I start wondering how any project ever gets approved, or whether restoration risks being co-opted by bureaucracy. Of course we NEED professionals and practitioners, but we also need people. We need ordinary citizens to care. Restoration may be less of a technical issue than an ethical one, at least fundamentally, because it

means committing ourselves to something we value and what those values require of us. We need people to see the river as a character in the stories we create. No regulatory process can ensure an ethic of environmental responsibility.

Maybe Pam and Paula pick up on my doubt. How do we begin? I keep asking myself. How do we fight this fight? When there are so many people, agencies, and politics involved, how does restoration not become a tangled, snarled mess? More than once, Pam and Paula say they need people like us. They need people who are starting careers to continue the work of Team Willamette. The work is slow and continuous. It's never easy or perfect, but we have to try. In the end, that's all we can do—accept the imperfections of bringing the frayed strands together of restoration and keep trying.

We arrive at Luckiamute Landing with just enough sunlight to unload and set up tents. Near the shore, two students sit cross-legged and meditate facing the river. Two others skip stones. And two upright paddles tent a pair of wet pants. On the nearside of east, the sun crawls towards the horizon, and a spider creeps steadily over uneven stones.

Why do people love water so much, even if we're not all river rats or fish squeezers? Oregon naturalist Robin Cody writes that all the willows, beaver, and other water dwellers are just another way the river carries itself through the vessels of other beings—stems and bones slurping up water. But I wonder if the opposite is true—that the water in our cells and veins are called by the river, back to the primordial pool that

birthed us. Our blood might have the same ionic composition of water formed in the days when wetness was our home. Our former life as a fish haunts us, something atavistic and ancient recessed in our guts. Even though people can no longer survive in water, our legs may remember when they were fins. We have long since abandoned the salty seas for earth, but the underwater world still calls to us.

As the sun fades we gather around a picnic table and fire pit, giving ourselves time to take in all that we have learned throughout the day. Paula plays Frisbee with a few students, while another group circles up and talks about how to make the best margarita. Night falls gently and carries the smell of wood smoke and charcoal grill. Stan and Dave are making burgers and hotdogs, and they cook for the entire group without complaint.

We are content to stand around the fire with our food, as light from the near-full moon haloes our heads. We take turns reading from a book of poems and become more theatric as the bravery and beer settle in. A few students roast marshmallows on willow sticks, trying to see who can get the perfect browned skin without charring it. Laughs, groans, and sighs rise in time with embers that spark against an onyx sky. Tomorrow will be our final day on the Willamette.

*9/23/2010*

Either from weariness or eagerness to be home, the group is quiet today. The rain doesn't help. It smatters our coats in generous dollops. Somehow we can withstand the water splashing from below but not above. My "rain proof" jacket has soaked through and a cold I can't shake settles in deep. I try to think back to only a few weeks ago, when I was so hot I could barely stand it, but the feeling is too distant to seem real.

After a quick stop for lunch on a less-than-ideal shoreline, we paddle straight for Independence. The guides point out different landmarks, the Buena Vista Ferry, or sandstone walls that look to be one hundred feet tall. In my boat, we acknowledge these landmarks with a brief, "Ah yes," or "Hmmm," more out of courtesy than interest. Despite the windburn on my face and the exhaustion in my bones, I sit in front and set the pace of one stroke per second. The woman on the other side keeps my rhythm. We hardly break except to wipe the rain from our face.

On land again, we pack everything up with the intensity of worker bees: Cleaning out the rafts, deflating them, gathering paddles, stacking life jackets, hauling, loading, separating.

The group circles around one last time, close enough to appear chainlinked together. After the cramp of tents and rafts, we feel at ease standing near one another. The final gathering is brief and unadorned. We give our thanks, and then we go home.

As a final class requirement, each of us submit a reflection on the trip. I could have written about the policy of restoration or the science. I could have shared my

doubts and opinions on whether it's all feasible. Instead, I share my hope. I hope that we stay connected to this place and remember the sway of the Willamette. And I hope that we understand restoration is as much about the land as it is about our hearts and minds.

I had good reason for that hope. All of a sudden, a flood of responses came from other students, full of wonder and gratitude. They wrote about learning from past generations, about enjoying, cherishing, and honoring the resources we have to pass along a healthier river system. They wrote about feeling closer to the farmers, people, and land. They asked what their own role might be in the future and the slow threading of relationships to fulfill the necessary work. One student wrote about her newfound understanding of the phrase, *we're all in the same boat*, feeling the connection between the "raft, the river, and us." And one wrote about how the course of her life had been altered, as if the world suddenly dropped a big boulder in her stream and sent her in a new direction.

We got out of the boat and still cared. We could easily undo the knotted strands, just by tugging the end and walking away. We could go back to being undone, calling the weight of loss too great and look with pity to the future, having never grasped the courage to imagine a world better than the one we inherited. It would be easy to do.

Or we could remember the fin of fish cutting upstream, the bone and beak of heron, the fertile farmland, the larkspur, turtle, fox, and the volunteer; the agency and

the visionary, the engineer and the owl. We might remember that the world is woven. “When one tugs at a single thing in nature, he finds it attached to the rest of the world,” says John Muir. How do we continue, then, to make this daily braid?

At home on solid land, after I’ve unpacked and warmed up, I find a strap I use to harness my kayak to the car. As best I can, I remember the instructions from the fisheries and wildlife student on the first day, which seems far way. You make a loop, and then another loop. I take the straight strand and make loops, weaving each one through the previous circle. Somehow I remember the swish of his hands. When I am done, my strap is woven. It’s imperfect and warped with uneven bulges, but knotted just the same.

## Meander Scars

A leaf-littered path veers into an arch of broadleaf trees and conifers. The Oregon ash stand solemn with bare branches; the oaks—both Oregon white and California black—wave lichen-bearded limbs; and the Doug-fir bow under the weight of rain. The snowberries have pushed out their first pearls, but most everything else is de-leafed and twigged. Even the sky looks bare. Instead of a low winter sun wreathing the sky, a depthless grey extends from hill to horizon.

I am walking in the 2,300-acre Howard Buford Recreation Area between the confluence of the Coast and Middle Forks of the Willamette River. Here, volunteers have been working for years to enhance floodplain habitat within a two-hundred-acre region called South Meadow. I came to see a recent channel excavation and reconnection project, to see what it looks like to build a river.

The path to South Meadow curls from a crowded parking lot and through rain-slicked trees with licorice ferns draped from the trunks. Then, it runs parallel to the Coast Fork before opening up to a field where cattle grazed for many years. It is here that the Friends of Buford Park & Mt. Pisgah are trying to bring back native vegetation, in addition to reconnecting old river channels still ringed with trees.

I stop to look at the Coast Fork to get a sense of its mood. Brown water churns as though it has somewhere to be. At the far shore, bare willows stalks have turned blood red, the only color in this two-toned afternoon, except for small washes of green

from Himalayan blackberries. Further back, the upper branches of broadleaf trees reach upward like a river delta yearning for the sea.

The noise of other people falls away. Soon, the only human sound is the crunch of my boots on gravel, gravel that has been pried loose by thin fingers of water grasping for the Willamette. I'm not sure I'm going the right way. It doesn't help when I don't see another soul around and hear the whispering "tsk" of kinglets above my head. *Tsk tsk* they say. *Silly girl. You're going the wrong way.* The weight of a distant place sinks in further when I read a nearby sign: *Not a designated swimming area. Deep water. Sometimes polluted. Swim at your own risk.* For the third time in a quarter mile, I get out my map to see how far I am from South Meadow. By now the map is haloed with water droplets and the lacy pattern of running ink. I promise myself I won't deviate from the trail, even to look at the river.

I had planned to meet someone out here, a man named Chris Orsinger. Chris is the executive director of the Friends of Buford Park and orchestrator of the South Meadow project. He would have made an excellent guide, but the week before Christmas turned out to be too busy for him.

I had met Chris at a Willamette River conference, where we talked about the South Meadow project. He was late for a workshop but talked to me anyway, pulling out maps and laminated images of the area, answering all my interjecting questions without pause or impatience. In one aerial photo of South Meadow during the 1996 flood, Chris showed me how the high water filled historic side channels of the Coast

Fork. Under normal flow, water no longer fills these channels because they've been blocked by culverts and riprap. What are left are dry, shallow depressions that Chris called 'meander scars.'

As soon as he said the word, my mind flashed. I kept nodding and smiling as Chris talked, looking perfectly attentive. But my head was somewhere else. In scientific and restoration circles, phrases like *lateral channel migration*, *fluvial dynamics*, *benthic invertebrates*, and *nonstructural flood storage* are common. But *meander scars* was so...plain? Harsh? Unkind? What did it mean? Scars are leftovers of harm, the body's attempt at wound repair, some cruel reminder of hurt, some evidence that a thing used to be broken. The phrase implied that the river was the wound, and the absence of it, the scar. Rivers, after all, cut into our land and rip out trees. Could it be that people see rivers as an injury that needs fixing? It's possible. The Swiss-German word for channelization is "corrected," as if rivers were intrinsically broken and needed our intervention to heal.<sup>64</sup> Were the sunken trenches of drained river channels really "fixed"?

I don't think Chris meant meander scars in this way. I think he used it to refer to what's left over from *our* harm, because we have injured rivers in so many ways. We take the bends out of them. We block them, drain them, fill them, and build over them, turning beauty into scars. A funny thing: when I looked up the word "scar" the

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<sup>64</sup> Benner, P. A. & Sedell, J. R. (1997). Upper Willamette River landscape: A historic perspective. In A. Laenen & D.A Dunnette (Eds.), *River quality: Dynamics and restoration* (pp. 23-49). New York, NY: CRC Press, Inc.

antonyms were “rebuild,” “mend,” and “repair.” So if the opposite of “scar” is to heal, and we are the cause of harm, then what opposite force of our actions will undo these meander scars and make this river whole? Maybe reconnecting what we have severed is the right answer.

After meeting Chris, I looked at aerial photos of the river near my home, curious to see if I could find these meander scars. They were everywhere, scored into fields and crops. Then, they would sigh into a faint shadow, like a chocked-off thought. Here and there, blue lines of river faded to a hollow wrinkle. I realized the slight depressions on Ed Rust’s property were indeed the meander scars of the Little Willamette. I wondered what it would take for these scars to go away, and with so many of them. And I wondered what they looked like up close.

Which is why I’m out at South Meadow now, not just searching for the scars of a wounded river, but trying to see what restoration efforts look like. The area just before the meadow doesn’t look like a place of healing or repair. It looks like a combat zone. Piles of wood, both cut from trees and milled, scatter the ground. As I walk by, a winter wren springs from a wood pile, bobs, and then calls in warning. All around is evidence of intervention: a pile of mulch and earthmover tracks cradling small pools of rain water. Later when I enter the open field of South Meadow, I see stakes, flags, and a waterlogged glove among the brush.

If I hadn’t spoken to Chris beforehand, I would have thought this was the work of destruction. Restoration is a paradox when people have to make messes to clean up

others. Sometimes restorationists inflict wounds to heal the scars of a past injury, similar to when doctors break a bone on purpose so it heals right. The hope is the temporary invasion will lead to greater healing, that the original scars will fade, and that the system will work as it did before. Sometimes the body can't heal itself without intervention, and maybe the land works this way, too.

But what if the wounds we make in restoration turn out to be bigger than the original harm? The thought has crossed my mind, especially when I think of Ben and an injury he suffered as a nineteen-year-old. While remodeling a house, he cut his right hand on a skill saw, severing the tendons in his thumb and index finger. The gash was atrocious. Even when doctors dressed the wound and Ben elevated his hand, blood trailed down his forearm, draining from the severed network of vessels. When they finally sewed him up, jagged black stitches threaded down his hand. It looked like Frankenstein. I remember seeing Ben stare at it, his face ashen.

The worst of his scars, however, were not from the skill saw, but from the doctors. When Ben severed his tendons, they snapped down to his wrists. The doctors had to cut into his palm to get to the tendons and reconnect them. Now the wrinkled edge of a scar runs the length of his palm, fading into the skin of his wrist. Besides the scar, he never recovered full function and sensation of his index finger and thumb. Every winter, a deep cold plagues his hand. The blood doesn't flow right, even with everything connected again. It's the slow accumulation of scar tissue. Doctors have suggested further surgeries to remove the scar tissue and improve his circulation. But

Ben decided to let his hand do the rest of the healing. He didn't want any more intervention.

On some level, I fear our intervention with river systems could also result in a bigger scar than the original injury—not just at South Meadow, but anywhere. Even with the backing of precision, and planning, things go wrong. Rivers don't have scar tissue, but they have silt. And silt could build up and block the water from flowing. What harm, if any, should we allow for the sake of healing? Who gives us permission to intervene?

I come to a lookout point at a wetland and excavated channel. Mesh netting has been laid down along the bank, possibly to prevent erosion and allow plants to establish. From what I can tell from my map, this area was excavated some years ago. The plan was to open up the channel again to improve water quality and fish passage, allowing the area's network of veins to circulate water.

Aside from the mesh netting, the channel looks real. Snarled branches tangle the shore. Leaves are underwater too—yellow, orange, flaming red, and the white undersides of willows. I blur my eyes, and the netting disappears. Back in focus, I could almost overlook it with the throaty sound of water moving over rocks and distracting my vision.

Further along, the South Meadow trail bends to a channel that was excavated in 2010, only a few months ago. Unlike the one I just passed, the channel has denuded banks and a steep grade that run for several yards.

Stakes with bright orange tips rise from the middle of the water. Black fabric stretches across the channel, crumpled in places like folded laundry. Netting crosshatches the ground. The trees and shrubs are gone. The wound still gapes. When I pull out the excavation plans I see that even the logs and deep pools were deliberately placed, a level of precision that makes South Meadow seem prosthetic. Am I looking at a newly stitched wound? A fake river? Or is this a step toward healing?

In the rain I turn my head down and stare, not at any particular point. Eyes and mind un-focus, trailing into a half dream, half aware of the rain, and feeling the cold more within than without.

Maybe the unsettling cold is because on top of the netting, the fabric, and the no-trees, I don't see any aquatic insects when I overturn stone after stone. Maybe because I know for every South Meadow story there are a thousand other scars that will remain, or wounds that will never heal.

It's odd to think that people would even try to heal something as complex as a river—this endless story of a stream, flowing on and on, and never pausing for a moment until the end of the world itself. Think for a moment where the water has traveled. It slid through soil and pockets of air, passing through worms and moistening a stone. It traveled through the downy throat of a fawn, moving into its gut. The water

climbed through stem and gave the nootka roses its petals. The water twisted in the trunks of oak trees and slid down the knotted skin of cottonwoods. It lifted into the air and came down as rain onto mountains, slowly softening their edges. It leaned into the earth—deep—where it stayed cool and mixed back in with the water of the stream. How can we pretend to know how to fix something that traveled through sky and earth, and so many places in between?

But then my mood turns sympathetic. The Friends of Buford Park have sowed and pulled on behalf of a river. They have logged more hours than I could imagine and undertaken not just the simple tasks of removing species and bringing back others. They have done more than plant trees and pull weeds. They are rebuilding a river, and how brave of them to do it. How unfair of me to criticize something as a spectator. Perhaps the risk of greater injury is worth the possibility of healing.

The grass and trees have yet to grow back and heal the earthmovers' scrape. For some time, stitches of netting will score this flat palm of land. The water has just begun to flow from the winter rain and will take time to pump through all river veins. Silt could build up and reduce circulation. But for now, it is time to let the river do the work. No more surgeries. Let the rain fall, and let the water run.

At my final stop, I come to a seasonal crossing with low grade, now full with ankle-high water. Chris warned me about this spot—if it rains heavily enough and the water rises fast, I might not be able to cross and get back safely. I might have to climb

a tree he said. The rain has stopped, so I feel safe to stand in the middle of the crossing and let the water smack against my rubber boots.

I blur my eyes but I still don't see trees. The netting and fabric smear to a haze but don't disappear. So I close my eyes completely. Everything fades. In my waking dream, the prints of Caterpillar tractors become fox and turtle. The trees and understory shrubs grow back in my mind's eye. I can picture the wicker pattern of branches and twigs near the soft water. Then, the faintest sound, like a small tap, reaches my ears. I imagine a lingering oak leaf trilling the water's surface.

Can this channel ever be whole again? Will these meander scars fade into the imagination and hope of a wild river, the one in my head and heart? I don't know.

What I know is Ben's hand isn't the same as it was, and it never will be again. But when it reaches for mine, it feels like love. And I know right now, the water at South Meadow is flowing. It fills in the shadowed trench that presses into the earth. It flows and bends around the streambed curves. When I touch it, it feels like a river.