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An Elemental Community: Contemplations of Place

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AN ELEMENTAL COMMUNITY:

CONTEMPLATIONS OF PLACE

By

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contents

prologue

There are only two mistakes one can make
along the road to truth;
not going all the way,
and not starting.

Buddha

I began my college career at age fifty. It wasn't long before I began to see the world through a new lens, one more critical, a lens of science rather than opinion, and through the eyes of great thinkers and writers – Aldo Leopold, Rachel Carson, Gifford Pinchot, John Muir, Craig Childs, Naomi Klein, Elizabeth Kolbert, and so many more. I began to wonder if I had perhaps come to the table too late - too late to truly grasp the issues, too late to change, too late to make a difference. I asked that question several times in class discussions and was always told no, but no one ever elaborated.

Many things have changed in my lifetime. The polluted Fox River that ran through my back yard in Illinois as a child, the River I couldn't resist, the River that kept giving me blood poisoning, is now "clean" and marketed as a recreational destination. Smokey the Bear, a 1944 social construct of the U.S. Forest Service, continued to warn Americans "Only you can prevent forest fires." Smokey was joined in 1971 by Woodsy Owl, who encouraged us to "Give a Hoot; Don't Pollute." In 1970, President Richard Nixon created the Environmental Protection Agency (EPA) by executive order. Also in 1970, the Clean Air Act was passed, followed by the Clean Water Act (1972) and the Coastal Zone Management Act (1972). All of this escaped my notice as a child, indeed as it would for most children. Growing up with the good results of these laws, I came to take it all for granted. If I thought of clean air or clean water at all, I probably would've said I was glad the government was taking care of it.

College shattered that naïve belief and I began to wonder. What has really been happening? How had I not noticed? I didn't blindly trust the government and industries to look out for my welfare, but how had I missed so much? What would the future hold for my children and grandchildren? Beliefs I previously held about climate change, clean air, clean water, and healthy food could no longer stand in the face of mounting evidence I had either not known existed or chose to ignore. What could I do?

I began to realize if my desire was to truly make a difference for the future, the only thing standing in my way was me. I had decided to return to college, to educate myself, to make more informed decisions, to take a stand. As all this new knowledge turned my world upside down, I sought solace in nature. The mountains that surround my home. The canyons that bring the lifeblood of water from the Bitterroot Mountains.

The deer, elk, black bear, and turkey that wander through my back yard. The nuthatches, juncos, and Steller's jays so appreciative of the seeds in their feeders. The natural world gave more than solace; it gave me purpose and determination.

This thesis is a series of four, stand-alone essays that explore my journey of understanding up to this point in time. These essays and meditations are divided into four sections: air, fire, water, and earth.

These elements are the four elements of Buddhism. I chose them as a framework, not because they represent the actual, physical elements for Buddhists (which they do not), but because they represent qualities that are valuable to journey: the motion of air, the energy of fire, the fluid cohesion of water, and the solid foundation of the earth. These essays, arranged in no particular order, explore these elements and their qualities as they have aided my journey.

In the essay *Seasons in the Wind*, air represents movement - the running away from one thing in order to find meaning in another, a way to satisfy a restless heart. In *Where There's Smoke*, the energy of fire fuels the discussion of the hubris of man in relationship to the natural world. The essay *I Dream of Water* explores the interconnectedness of all things in a region, which serve to form a cohesive whole, whether for the good of all or to their detriment. In *Subsistence on Earth*, the foundations of the Earth, assumed to be the immovable substrate of our lives, demonstrate the one immutable truth about Earth – it is a dynamic structure. Just as my own journey reveals constant change in knowledge and belief, so too the shifting Earth we call home. All of these essays are particularly centered in my home place since 1985, the Bitterroot Valley of Western Montana.

I believe there is a place on Earth where each of our individual souls finds an inner peace and rest. Buddhism teaches that these are internal qualities; that peace comes from within. Perhaps it is indicative of a much longer journey to truth that lay ahead of me, but I tend to associate peace with the external, physical quality of home. The home place has always seemed the center of life for me. As an American child of the 1960's, this idea of home is attached to property – a house or apartment or condominium. In writing these essays, distilling my story with the stories I have learned in the past six years of college, I've experienced a metamorphosis in my thinking. While I like all the things that home implies – warmth, food, rest, safety, security, relationships – I found that my stories all contain the aspect of looking out a window or walking out a door, a journey of mind and body. The natural world intruded into each essay, informing me of a tectonic shift in my soul.

My sense of community and belonging remains grounded in the four walls of my home – my husband, children, grandchildren, friends, debaters concerned for my soul change – but the real essence of what I seek is an understanding of the larger community – outside, in the air, the fire, the water, and the earth. From soil biota that enabled my garden in Victor to thrive to once-thick forests burned to ghosts by the hubris of man, from the lies we tell ourselves as a society, to the hope we maintain for the future, the accusations and the hope lie in the natural world.

These essays explore my history, searching for my place in my community, searching for hope.

air

The mountain winds,

like the dew and the rain,

sunshine and snow,

are measured and bestowed

with love

on the forests

to develop their strength

and beauty.

John Muir

catch and release

an air meditation

We live in a constant state of catch and release. Breath in. Breath out. We catch air, reel it into our lungs, let it dissolve into our bloodstream, give its energy to our cells, and then we release, discarding carbon dioxide back into the universe.

When I began meditation practice, I began with the breathing meditation, as do most new to the art. Focus must rest on the breath. Breathe in. Breathe out. Just observe your breath flowing in and flowing out. Sit quietly, allowing your mind's eye to see your breath entering and leaving your body. Make no attempt to change your breath. As you focus on the breath, it slows as you relax, as you allow yourself to follow your breath. Breathe in. Breathe out. It is relaxing, if you focus, if you just follow the breath.

There is a quality of expansion in the taking in of air. There is motion. A filling up. This expansion is, of necessity, impermanent. I must release. I must let go. I

cannot hold on to the breath. It is transient. The old must be allowed to release, to leave, to make way for the new.

Air, the element necessary for the breath, is constantly in motion. Movement has become synonymous with progress in the lives of Americans. We must accomplish something. Fill in another line of the resume. Be well-rounded. Have a vast array of experiences. Own something. Accomplish something. Have something to show for our lives. Perhaps all that motion represents the reason we have forgotten how to breathe. Not the physical act, but the psychological.

In my own life, in trying to find a place to rest, to belong, to be in community, the breath meditation reminds me that to hold on means certain death. For life to continue, to thrive, there must be an exchange. I live by letting go – of air, of heaviness, of expectations. I find my place by following my breath.

Breathe in. Catch what is necessary to life.

Breathe out. Release what is not useful to the soul.

Just breathe.

seasons in the wind

To everything – turn, turn, turn
There is a season – turn, turn, turn
And a time to every purpose under heaven
- - -
A time for peace, I swear it's not too late.

"Turn! Turn! Turn!" by The Byrds (1962)
written by Pete Seeger (~late 1950's)
based on Ecclesiastes 3, The Holy Bible

It is difficult to find a new place in an old life. To reinvent life out of remnants of old lessons and new seasons requires some creative license and examination of personal history. It's New Year's Day, and I've spent the last 35 of these in a row with the man I married. We've lived in the Bitterroot Valley of Western Montana for most of those years, never more than 10 miles from the Selway-Bitterroot Wilderness. Our three children, now grown, two with children of their own, are off in other cities nursing

hangovers and making resolutions to stop drinking on New Year's. The pain I'm feeling has a different source.

Perhaps it's more a feeling of being lost than actual pain. I don't understand where I fit in this new paradigm. The kids and grandkids are still a big part of my life but our home at the mouth of Blodgett Canyon is down to two people again. The years of daily mothering are over and I don't know what to do with myself, my energy, my time. I've taken jobs and college courses, but I feel adrift in life. I want to chart a new course, but I don't know where to begin. My resolution becomes finding that course. This is the year I will do it.

The wind coming out of Blodgett Canyon picks up its pace and I shrink farther into the shell of my down coat like a turtle suddenly realizing it's out of place in these single-digit temperatures. The winter sky is crystal clear and the stars are bright beacons in the night. The coals in the fire ring are glowing red, undulating in a sporadic, mesmerizing rhythm. Rising from my chair, I turn my backside toward these coals, hoping the last bits of their warmth will give me a few more minutes before I'm driven inside by the frigid wind. Facing south, I see my old companion, the constellation Orion.

I first saw The Great Hunter in a southern Arizona desert sky outside Tucson. Grounded in a sea of stars on a hill above the San Pedro River Valley, my soon-to-be husband introduced me to Orion. Three bright stars in a straight line make Orion's Belt, also known as The Three Kings. From his belt, three stars dangle in a cluster, his sword. The bright orange star, Betelgeuse, is his right shoulder; his left shoulder is Bellatrix. Saiph is his right knee and the blue-white star, Rigel, is his left foot. In front of

Orion, the cluster of stars known as Pleiades, shows that the Bull is wounded. Orion has drawn back his club in his right hand and is advancing on the bull, distracting him by shaking a lion skin.

The coals no longer glow, and my memory is blown away on the wind. I return to this spot many nights throughout winter, to visit Orion, and remember his story. I think of the way he's repeated that battle in different hemispheres for eons. When spring comes, he will make his own journey to the south, but he'll be back next fall. By then, I hope to have found peace in my own journey and purpose in my next season.

Spring comes slowly to the cabin. I stand near its south-side wall and let the sun's rays vibrate their energy into me, warming me to my core. I stand still for long minutes, straining my ears to hear any birds that might be making their way back north. I want to hear the song of the robin, my test for the true arrival of spring. I'm lost in thought when a breeze coming out of Blodgett Canyon seems to laugh at me. It's too early for spring. I zip my fleece jacket and stand still, defying the mocking of that west wind. My mind drifts to the future, and what spring will bring.

Tomorrow I'll plant lettuce, spinach, radishes, kale, and peas in the hot box. I'll dig into the earth, and the rich smell of the soil will promise me that there is goodness to come. I close my eyes and imagine the smell. Even now I can almost feel the damp, cold soil on my hands as I cover the small seeds and pat the ground. When I pick up the watering can, it will be like getting reacquainted with an old friend. The wooden grip, cracked and splintering from years of use, will bite into my hand, cut into my palm, and the cold water will soothe the sting of that open wound. I'll crank the hotbox lid closed

and squint against the glare off the glass as the sun warms the soil. It's an artificial start of sorts, but I'm compelled to hasten spring's arrival. A cold wind rushes suddenly out of the canyon as the sun sets behind the mountain. I head inside and smile through my quivering lips.

Tomorrow, it turns out, has other plans. I awake to a skiff of snow on the ground. The dark gray sky threatens. The sun hides behind a bank of clouds over the Sapphire Mountains in the East. I hold on to my steaming mug of coffee and a futile hope that the forecast was wrong, that this storm will blow over by early afternoon. I hold on to that hope like a two-year-old child clutching his mother. It seems like a matter of life and death. I feel that my quest for answers has been like this child, clinging to what is known, unable to imagine the future.

For hours I pace from window to window, hoping the weather will break, hoping the sun will emerge playfully through the clouds, like we've been playing a game of peek-a-boo all day. Late in the afternoon, around 4, I zip my work coat, cinch on my work gloves, grab the seeds, and head outside, trying to force the issue. Immediately, a snowflake lands in my eye, but I pretend it didn't happen. I come to a stop beside the hot box, and look to the mountain. I'm slapped in the face by an icy wind coming out of Blodgett Canyon. I steel myself against it, but it just keeps pummeling me. Soon, the squall races out of the canyon, chasing the wind.

Snowflakes come in earnest now. I retreat. I know spring will come; I'm desperate for it to arrive, but it won't be here today. I enter the cabin and as I close the door, I can almost hear laughter on the wind.

As I pull off my buckskin gloves with the soft, rabbit-fur lining, my mind races toward a memory. These gloves once belonged to my father-in-law. He was wearing these same gloves the day he came to help plant my first garden in Victor. An uncompromising man, Gene was five feet eight inches of determination. Dad had planted many gardens through the years, and there was no denying his expertise, at least not in his presence. He planted seeds to exact spacing and depths as specified on the package, as opposed to my guestimates. We were often frustrated with each other in this work. Through the years, we somehow came to an understanding, mostly centered on butting out of each other's tasks.

His eyes began to fade one winter. He rallied a bit in the spring. During his last summer, he sat in a folding chair and watched me dig his garden by hand. The difficulty of the project showed just how much his perfectionism had given way to age. Bent shoulders, weak hands, and dim vision hadn't let him add much compost the last three seasons, so my digging was labored. Dad noticed that I'd worn holes in my work gloves, and as we walked to the house that spring evening, Dad reached up and took his best gloves, the ones with the rabbit fur lining, from the shelf. Handing them to me, he said, "I want you to have these," then turned and walked into the house.

I helped Mom tend their lawn and garden all that summer; Dad rarely came outside anymore. Ninety-two cycles of seasons were coming to a close. Did he ever feel lost, without a purpose or direction? If so, he never showed it.

Dad died in late September. As we lay him to rest on the hill above the Bitterroot River west of Hamilton, where the river comes from the East then turns North to flow

under Main Street Bridge, I sang “Amazing Grace.” A cold wind blew out of Blodgett Canyon at my back.

A log in the fireplace snaps, and I jump from my memories. As I rise to put more wood on the fire, Dad’s gloves slide onto the floor.

Summer arrives before the calendar announces it. I hardly notice because there’s been so much to do. The lettuce and spinach in the hot box have already provided many salads. Just last night I sautéed the peas and placed them on a steaming heap of mashed potatoes, the remnants from last year’s crop. There is nothing as warm and flavorful as the food I grow with my own hands. Squalls still make quick runs out of Blodgett Canyon on cold puffs of air; Old Man Winter having his last little fits before he finally leaves town. Orion, too, has drifted away on his own vacation, but I hardly notice. The days are getting longer, nearly twelve hours now, instead of the roughly eight hours of daylight at the Winter Solstice. The garden is being planted in earnest. Wide rows of green beans. Barrels of potatoes. Soon I’ll be off to the nursery to buy my tomato plants.

This morning, I’m tempted by the local feed store’s ad for chick days. I haven’t raised Rhode Island Red Chickens since the years we lived in Victor. Known as exceptional layers, the six or so Reds I had at any given time never failed to give me an average of one egg per hen per day. In the quiet, early morning, I’d put on my work coat to ward off the chill, go out to feed the girls, and bring in the day’s bounty. I cracked the warm, brown eggs into the hot bacon grease in the cast iron skillet, sometimes adding a little garlic and onion.

Reinventing my life isn't moving along as I had hoped. With only two semesters standing between me and my mid-life Bachelor's Degree, I am panicked. How will I find a job? My resume, a friend tells me, needs the boost field work can supply. Many interviews but no job offers later, the phone rings. I'll be heading to North Dakota State University's Central Grasslands Research Extension Center to work with their agronomist as a field technician.

I 'm excited and fearful as I pull into the station outside Streeter, North Dakota. What can I learn about Industrial Agriculture? Is it as bad as my locavore friends in Missoula say it is? Is it better? Is it worse? How spoiled have I become, these many years of connecting with the Earth in my own garden?

The first two weeks are spent in a lab-like room. My partner and I weigh, package, and label seeds according to a chart the agronomist has made. Some days we are sent to the fields to weed the plots in advance of planting. Some days we mow around the bare plots. Finally, the time arrives for planting.

It is warm, perhaps too warm. The agronomist may have waited too long and missed the rains needed for proper germination. Tension fills the air as I'm pulled behind the shiny, red Case tractor in an old, rusty seeder, circa 1950. One pass and it may be so hot in that rolling hell box that I feel I might pass out, only to have me scrambling to shut and latch the door against a cold, bracing wind as we turn for the next pass. Boxes upon boxes of seeds are taken from the Chevy Blazer and shoved at me through that door, day in and day out, until all 30 acres of 10 foot X 20 foot plots are planted. I am learning how hard and how exacting big ag research can be.

I dump those carefully measured packets into the hopper, spoon inoculate on top, lift the tube, allowing the seeds to drop into the slowly spinning tray that pushes them to the opening where they drop down into the eight octopus-like tubes that send them out the floor and into the soil. I'm half deaf as I drop out of the seeder to the ground at lunch time and at the end of each day. There are no shocks, and apparently, WD-40 has no effect on the squeaks and squawks of my antique chariot. My face and hands are black, covered in inoculate, and I'm too tired to be afraid of whatever airborn carcinogens may be permeating my every pore.

Once the grasses and legumes begin to sprout, hand hoeing of the ubiquitous kochia, thistle, and stray GMO begins in earnest. In the grasses, weeding is meticulous. You must pick the single blade that doesn't belong, while leaving the desired shoot undisturbed. There's no irrigation here, so the ground is dry, making this a Herculean task, accomplished bent over on hands and knees, crawling along the ground, straddling the rows. No real farmer can take the time and care to do this, but I'm assured that these are test plots, and the results will inform Industrial Ag's goal to feed millions of Americans. I don't buy this line and, though I keep my mouth closed as one day drags on into the next, I feel that the look on my face gives me away.

Perhaps sensing my angst or perhaps to avoid my continued questions about these practices, the agronomist sends me to no-man's land. These are test plots of native prairie plants on the tops of sunbaked, windswept hills around the station. The cattle were to have been kept out by electric fence, but I find myself sitting on a garbage bag to avoid sitting in piles of cow shit, using scissors to cut the Kentucky bluegrass, Bermuda grass, crab and rye grass from among the Big bluestem, needle-and-thread,

blue grama, and a host of other native grasses, rushes, and sedges. Supposedly, this is to test how well these native plants do in pastures. After weeks of this work, I find out there's actually no funding for this research. Stunned at how much time I've spent laboring in these unfunded plots, I wonder how ethical it is that I'm being paid from some other part of the budget to do this work. It's just another question gnawing at me, added to my growing list of concerns about the ethics of Industrial Agriculture.

Away from intense plot management (hand weeding, spraying herbicides, spraying fertilizer, mowing, and then spraying some more, ad nauseam), these reprieves give me a gift. I learn the moods of the prairie by watching the way the rain clouds build in the West, by watching the way they move over the seemingly endless landscape that surrounds me. In this prairie pothole region, waterfowl abounds. Mallards, blue-winged teals, northern pintails, and canvasback ducks are a normal sight. I'm most fascinated, though, by the American White Pelican, a bird I don't recall ever seeing until this summer, the only wildlife I have found on the prairie I cannot find at home. With a wing span of nine feet, it's one of the largest birds in North America. Their large white bodies glide through the sky on outstretched wings of white with black wing tips and trailing edges. They have large heads and heavy bills. The more time I spend in my be-shitted hilltop observatory, the more I'm entranced by the way they soar and gracefully wield in unison to land lithely on the surface of the water.

No one here and no one at home knows the underlying reason I said yes to this job. My journey east, following the yogic tradition of facing the sunrise and the direction of enlightenment, was to find answers. Why am I here at this point in my life? I went looking for my future among the memories of my past in a quiet, out-of-the-way spot, far

from the noise of my daily life, far from anyone I knew, far from the familiar. After more than a month in a job I steadily grow to despise as I realize firsthand its abuse of the land, I am no closer to answers.

The afternoon before we begin the grueling harvest cycle (harvest, bag, record field weights, collect sample bags, weigh again, dry, record dry weights, grind, send samples for testing), I find myself staring out at the prairie, watching the ever-present wind blow through the grasses. I'm reminded of the way the wind moves the grasses in the fields at home and I suddenly want to work very hard. The agronomist has said that because he was able to hire two interns this summer and because my partner and I have been so efficient, one of us may get the chance to leave earlier than the original mid-August cut-off. My native NoDak partner has no interest in leaving early. I jump at the chance.

After two weeks of 10-hour plus days in the heat and humidity of the plains, the harvest is complete. The samples have been weighed, measured, ground, and shipped. There is still some work, but not enough for two people. My rig is quickly packed on a Friday night; Saturday morning at 4:30 I'm on the road headed west, headed home. I buck a head wind across western North Dakota. As I enter Montana, the wind picks up its pace and adds the heat of a blast furnace. It's 98 degrees as I drive through Billings and my AC is not working. I can't keep ice in my cup or my small ice chest. I don't recall ever before or since being so happily miserable.

I'm simultaneously no more and no less lost than when I ran away east. It was a long, hard journey, and answers still elude me, but I am headed home.

As I drive up our dirt road, I pull out my cell phone and call my husband. In a rare instance, I've kept a secret from him. He isn't expecting me for another two weeks.

"What are you doing?" I ask.

"Torey [our youngest daughter] is here. We've been working outside on a little surprise for you. Should be done by the time you get here."

I smile and reply, "Really? You sure about that?"

Confused, he says, "Yah. What are you doing?"

"Look up," I tell him.

"What?"

"Look up. What do you see?" I ask.

When he realizes I'm at the end of our drive, his smile covers his face.

"Hang up," I tell him. Before I can even get the car turned off, he is pulling me from it, hugging me close.

"Torey!" he yells. "Get your Mom a beer."

Long into the evening, we sit outside in the garden. The surprise is a stream that flows through the middle of my garden. A recirculating pump in the catchment tank has brought water to the dry stream bed we'd built there years ago. The soothing sound of water tumbling over rocks and the voices of two people so dear to me is a balm.

When I left, I thought the joy of tending this year's garden would go entirely to my husband, but I've made it back in time to help. Tomorrow, I'll play in the garden, maybe can a small batch of green beans. Tomorrow, I'll walk down to Blodgett Creek and get reacquainted before the water dries up for the rest of summer. Exhausted, I rise from

my garden chair in the twilight, and as I glance toward the mouth of Blodgett Canyon, a warm, gentle breeze brushes across my face.

There are few birds at the feeders these days. The grasses and shrubs on the hilltops are drying out. Some chickadees still flit between the branches of the Ponderosa pines. The pine siskins and nuthatches ignore the feeders in favor of the pine seeds they are hurriedly stashing in the barks of the trees in a race against winter. The garden soil is turned, leaves are dug in as they become available, and the beds are readying for their winter sleep. The shelves in the pantry are full of canned green beans, beets, tomatoes, and salsa. Cold storage holds carrots, onions, garlic, and potatoes. The Black-eyed susans still bloom in the garden, awaiting the frost that will force them into dormancy. Deep, red leaves mark the spot where the strawberry plants have rested for the season.

When I turn off the pump and the stream bed becomes quiet, the air is still. It's so quiet I can feel it, like the air is becoming heavy. Indian summer remains one of my favorite times of year. Cold nights, sleeping with the bedroom doors open to the outside, snuggled under my down comforter. Listening to the coyotes howl and yip as they work the ridge. Knowing the black bear is prowling under the apple tree and the chokecherry bush, making his way to the neighbor's apple orchard down the hill. Straining to hear the elk bugle at the edge of the meadow up the mountain. So much that I love is right here. I may not have found the road map to my future, but I've realized the importance of my place, here and now.

There is a peace that comes over me each fall, but it's stronger this time than ever before. Harvest, Halloween, Thanksgiving and Christmas will bring family, friends, good times, and reminiscences. Holding babies, playing games with children, talking with teenagers, loving each other. It all happens near the fireplace in the living room or around the fire ring in the front yard. Tonight, I'm mindful that the things I love most in life are right here. I understand that in these years in this home, I've found a rhythm, built a life, settled in. I don't need to go away to realize that things like industrial agriculture are really as bad as some people think. I came to know that first hand, but still have no idea how to remedy the situation. I'm not sure how these farmers and ranchers could build a sustainable lifestyle different from the one they have today. I can, however, be committed to my home place and try to make it better in slow, steady, determined, loving steps.

I pull my hoody tighter around me as a chilly wind blows out of Blodgett Canyon. I arose before dawn and in the dark, early morning sky, I saw that Orion has returned from his journey, just as I have returned from mine. Winter is on its way and the cycle will begin again. Winter, spring, summer, fall. Each has a wind that blows out of the wilderness and whispers to me. Welcome home.

fire

There is no fire like passion,

No crime like hatred,

No sorrow like separation,

No sickness like hunger,

And no joy like the joy of freedom.

Gautama Buddha

consumed

a fire meditation

I once knew a young man who was passionate, always full of energy, never still. I don't remember what he was passionate about; it was many years ago when I knew him. What I do recall is that young man became to my mind's eye the picture of the age old phrase, "He's got a fire in his belly."

In Buddhist tradition, fire represents the quality of heat or energy. Fire warms us, ages us, and even consumes us. We digest the sunlight of the past each time we take in nourishment from plant or flesh. We expel that energy in activity or waste. In some respects, you might say we consume the past.

Fire meditations begin with a focus on the breath, then shift to that place within the human body where the center of spiritual power resides. The solar plexus. The place between your heart, the seat of passion, and your stomach, the seat of desire. Activating this, the Manipura Chakra, releases inner energy to conquer fears, break

bonds of inertia and passivity. I do not practice this meditation often. While it warms me, makes me feel as though within me resides all the power I will ever need to conquer any demon, I resist. I am afraid I will be consumed.

Fire, like all the other elements, never “belongs” to us. We radiate warmth from our skin. Moist, warm air wafts away from us each time we exhale. Warmth is constantly being lost. The way to retain the power of the fire is to stoke it, to feed it until it burns hot enough to ignite determination, focus, and passion. Hot enough to consume my fears.

where there's smoke

A thing is right when it tends to preserve
the beauty, stability, and integrity
of a community;
it is wrong
when it tends to do otherwise.
Aldo Leopold

I am choking on politics more than 100 years old. If this were another time of year, not August, or another place in the world, not western Montana, the thick, low-lying gray outside my mountain home would be fog, not smoke from wildfires.

Just five days ago, I began repainting the interior of my mountain home. As I went outside to grab the ladder, I spotted a ribbon of smoke just up Blodgett Canyon and over the ridge in the Canyon Creek drainage. Each day the skies fill with more smoke blowing in from fires in other states, obscuring the ribbon. I wonder if the Canyon Creek fire now emits its own plume.

Today, I will be painting in the laundry room. My ten-year-old granddaughter, Abby, thinks I am painting the walls white.

"No, Abby, this is Coconut Twist. It has a hint of reddish brown like the shells of coconuts or the bark on the Ponderosa pines."

Abby looks skeptically into the can while I stir. "Looks white to me. What about you, Papa?" she asks my husband as he walks by.

"I'm not getting into it," John replies, eyes twinkling with mischief.

We exchange hugs, kisses, and I-love-yous. Abby heads for home and John heads to work.

As I pour my first tray of paint for the day, I complain aloud to no one, "That is not white." I climb the ladder and wonder if this is it. Is this the year my home in the Wildland Urban Interface (WUI) will be taken out by wildfire?

Back and forth, I roll Coconut Twist on the ceiling and think of the first people who lost their home in this Valley. The Bitterroot Salish welcomed the Lewis and Clark Expedition in the early 1800's. As Manifest Destiny swept across the Plains and into Montana, the Salish underwent a change of their own. The Chief sent delegates to St. Louis to request Blackrobes, their name for Catholic priests, to teach them of the white man's god. When Father Pierre Jean DeSmet and fellow missionaries arrived in 1841, they began building the first mission in the state. It still stands in Stevensville today.

More and more, white settlement changed the Bitterroot Valley the Salish had known. Beaver trapping changed the streams. Fur trading became the economy.

Their once wide-open homeland became riddled with fences. I think of the fire scars that line this Valley now, making it almost unrecognizable from the one I moved into more than twenty-five years ago. Sometimes it feels disorienting. The Salish must have felt disoriented as well, in a rapidly changing landscape.

When Salish Chief Victor began negotiating the Hellgate Treaty, he believed the agreement would ensure the Salish could remain on their homeland in the Bitterroot and white settlement would be limited. Isaac Stevens, Governor of the territory as well as Superintendent of Indian Affairs, was a man hell-bent on making a name for himself in national politics. As the government's principal negotiator with the Salish, Kootenai, and Pend d'Oreille tribes, Stevens' ambitions meant he would not allow the tribes to remain on their homelands. The entire process suffered from language barriers, miscommunication, and Steven's belief the Indians were a problem to be dealt with, a barrier to be removed.

Signed in 1855, the Hellgate Treaty actually put the Salish homeland at risk. By 1872, a renegotiation of the treaty removed the Bitterroot Valley from federal protection and support. Many Bitterroot Salish moved north to live among their traditional enemies, the Flathead Nation, under the terms of the Treaty. A small band stayed near St. Mary's Mission until October, 1891, when they, too, were forced to the Flathead Reservation.

I remember reading a story about one of the last remaining Salish to make that journey north. She recalled her people crying the whole way, dragging their tipi poles behind their horses alongside wooden rail fences. I find it difficult to imagine the depth of the people's sadness as they walked through the once vast, unmarred homeland of

their ancestors, mourning that loss and the betrayal of the government. What the Salish lost, what remains irretrievable in many ways, is a culture, a heritage, an inherent connection to the natural world and deep time. They suffered the loss of things you cannot purchase: their identity, their pride, their strength. What I stand to lose is only a house and some possessions.

The Forest Service Incident Information System online reveals the Canyon Creek fire started by a lightning strike only three tenths of a mile from the Canyon Creek Trailhead, a scant seven miles west of Hamilton, and just three miles from our home. This fire is one of forty lightning caused fires in the Bitterroot National Forest this week alone. The sound of helicopters shuttling to the Hamilton airport for fuel and the low hum of air tankers dispatched from the Missoula airport with retardant have filled the sky for five days now. The local newspaper assures the public that every effort is being made to keep this fire from spreading and becoming a threat to the City of Hamilton. Bringing strong, gusty winds, predicted storms have aroused fear of a big blow-up, where hot embers might easily ride winds east out of the canyon, down into the valley and into town.

As I climb down the ladder to refill my paint tray, I hear the buzzing of a plane. This sound may come from a spotter plane or a lead plane to guide a tanker in for another retardant drop.

The government that forced an entire nation from its homeland takes to the smoke-filled sky to protect mine. Politics set up these smoky skies. I first learned forest politics and history from my father-in-law.

When Gene Duncan was a forestry student at the University of Montana, class of 1940, one of his summer jobs was as a fire lookout on St. Mary's Peak, west of Stevensville. Gene, or Gunner as his cohort called him, drove his Model T about forty miles south from Missoula on all dirt roads to the trailhead. He then packed his gear and supplies up the four mile trail and straight up the forty-foot ladder to the lookout tower built in 1931. Every couple of weeks, he hiked back to the trailhead to meet a truck with his next batch of supplies.

When I met Gunner in the early '80s, he was long retired and liked to tell story after story about those old days. In characteristic, no-nonsense fashion, the Scotsman explained his job, "It didn't bother people to sit for hours and stare out at the forest, memorizing every ridge and valley, every color, every nuance. I knew it was important work and I took that responsibility seriously."

In college, Gunner had carefully studied the philosophies of America's first forester. When President Teddy Roosevelt inaugurated the Forest Service in 1905, Gifford Pinchot was his choice as leader. Pinchot set about managing the nation's forest with the utilitarian philosophy of "the greatest good for the greatest number in the long run." He popularized conservation of natural resources through wise use, the careful management of forest resources to meet the expanding country's appetite.

Fire protection was a main concern for Pinchot's Forest Service, because you can't use what you don't have. He trained his foresters that the secret of forest fire fighting was to find the fire early, fight it with everything you had, and stay with that fire until every last ember was extinguished. During the first two years of Pinchot's tenure, a small number of forest acres burned nationwide compared with previous years' totals.

Pinchot put pen to his philosophies. In 1910, he published *The Fight for Conservation*, a collection of speeches, previously published magazine articles, and new material outlining his three-fold "Principles of Conservation." First, conservation stands for development, not merely husbandry for the benefit of future generations. Pinchot believed it the duty of the current generation to develop natural resources for their fullest use now, rather than hold them in trust for future generations. Second, conservation provides for the prevention of waste. For Pinchot, the primary duty of man rests in his ability to control the earth he lives upon. Fires allowed to burn freely represented a reckless waste of resources in the view of America's first forester. Third, the principles of development and preservation must be "for the benefit of the many, and not merely the profit of a few." According to Pinchot's philosophy, the development of natural resources for the greater good of all could only be ensured if the government protected them and managed their use.

Rolling this not-white paint on the walls now, I try to understand the hubris of Pinchot's statement, "Today we understand that forest fires are wholly within the control of men." Gunner had explained the fire-fighting process of that time to me. "Timber burned is timber wasted. At the first sign of smoke, we struck every fire. If it grew, we would set up a war board and attack the fire like it was an invading enemy." Gunner believed to let a forest burn meant a forester was shirking his duties to his boss, the resource, and the nation. "We were honor bound to protect the nation's forests." Despite my respect for both Gunner and Pinchot, I still find it difficult to fathom any

individual or culture believing they can fully control nature, bend nature's will to their own.

Just five years after the establishment of the Forest Service, Pinchot's principles and the fledgling agency would be put to the test. The Northwest experienced extremely dry and hot spring and summer seasons. The previous fall and winter had proven wet, allowing brush to thrive, only to dry out in the heat. Numerous small fires were started from passing trains and lightning, more fires than Pinchot's Forest Service could handle. In the Great Fire of 1910, three million acres burned in Montana, Washington, and Idaho in just two mid-August days in what became known as the Big Blowup. Panic erupted on the streets of towns, as flames approached homes and businesses. Many towns burned to the ground as the hot ash and embers blew ahead of the fires on hurricane force winds. In Wallace, Idaho, community leaders vowed to fight the fire and protect their town, only to throw women and children from a train meant for their escape as sheer terror of the approaching holocaust drove the men to madness.

In the aftermath of the inferno, scorched earth marked the monster's path. Eighty-seven people had been killed, mostly firefighters. Pinchot declared the firefighters heroes. Though no longer the Forest Service czar, Pinchot used the men's sacrifice to bolster Congressional support, securing more dollars to conserve America's vast mixed conifer forests. Fire suppression became more than a policy idea; it became a primary concern of the Forest Service.

I need a break from painting so I pour myself some coffee and go to the office to check my email Though the Montana Department of Environmental Quality's Air Quality Alert is supposed to be lifted by lunchtime, I still cannot see past the other side of the canyon, less than a quarter mile away at 10 a.m. Normally, I can see for miles out this window, at least fourteen miles north to St. Mary's Peak. When snow covers the peak in winter, on bright, sunny days I can see a dark speck on the peak, jutting up from the snow against a clear, blue sky - Gunner's Fire Lookout Tower. When I became a University of Montana, College of Forestry student myself, I spent many hours at this desk, staring out the window toward that Peak, thinking about Gunner's stories.

Pinchot and Gunner were hardy men of a different time. No one fully understood the ecological role fire played in the landscape then. Man could suppress all fire. Lives and timber would be saved, and in Gunner's words, "the forests, the trout streams, the big game, all the things I have enjoyed in my life, will be there as my children's inheritance."

As I return to painting, starting on the walls now, I think of the thing I never really had the guts to outright admit to Gunner. At heart, I am somewhat of a preservationist like John Muir. Gunner felt these preservationists stood in the way of progress and jobs men needed to care for their families. "Those environmentalists don't understand the importance of good forest management," Gunner said.

I think Gunner misunderstood or was misinformed about John Muir. For a time good friends with and a mentor of Pinchot, Muir had been a staunch supporter of policies that would protect his beloved forests from fire and industrial destruction. Muir's

attitude toward Forest Service policies changed as he watched America's once lush hillsides and mountains denuded to feed the ravenous railroads and the mining industry. In 1901, a frustrated Muir wrote, "Year by year the [remaining forest] remnant is growing smaller before the axe and fire, while the laws in existence provide neither for the protection of the timber from destruction nor for its use where it is most needed."

When I bend down to reload my paint roller, I glance out the window. The Bitterroot Valley, too, had sacrificed much of its timber to Copper King Marcus Daly. This tycoon had the timbers shipped by rail to his Butte mines or to fuel the fires of his Anaconda Company smelters.

Raw copper ore from the Butte mines was roasted in heaps or stalls to reduce the weight of ore, thus reducing shipping costs and widening profit margins for mine owners. These heaps, at times as long as a city block, as wide as a city street, and six feet or more in height, would burn for two or even three weeks. Toxic smoke and fumes permeated the air. Most of the timber for those fires came from the Blackfoot and Bitterroot Valleys.

Muir loathed the fact that such actions were depleting national forests nationwide. Muir wrote, "In their natural condition, or under wise management, keeping out destructive sheep, preventing fires, selecting the trees that should be cut for lumber, and preserving the young ones and the shrubs and sod of herbaceous vegetation, these forests would be a never failing fountain of wealth and beauty."

Perhaps the best-known debate Muir and Pinchot had concerned the damming of the Tuolumne River to provide a reliable, secure source of water and power to the people of San Francisco. After the devastating San Francisco earthquake of 1906 when much of the city was destroyed by fire, Pinchot used the disaster as a wise use argument for building the dam. Muir favored preserving the Hetch Hetchy Valley of Yosemite as a wilderness, stating "no holier temple had ever been consecrated by the heart of man." For Muir the natural world was a spiritual temple to be preserved; for Pinchot, the natural world was a commodity to be used for the greatest good for the greatest number.

Muir lost this battle. His beloved Hetch Hetchy Valley remains submerged beneath water and political decisions. This clash of worldviews between preservation and conservation rages on today in debates about every aspect of managing our natural resources, from forest management to dam removal.

Both sides of the conservation/preservation debates have valid points and at times I'm conflicted about which side most reflects what I really believe. Living in the Bitterroot Valley in the 1980's, during the Spotted Owl controversy of the Pacific Northwest and married to a man who built log homes for a living, I understood the tension well. At the time, it was common to see a bumper sticker or a t-shirt with the slogan, "Earth First! We'll log the rest of the planets later" or "Try wiping your ass with a spotted owl." All the debate and rhetoric provided no solution, no alternative means of providing for our family.

In different forms, this debate rages on in the Bitterroot Valley today. I ran into a good friend at the gas station the other day. Jay was fueling up his logging truck, on his way to pick up a load of house logs for a local manufacturer. This is a good, kind, and compassionate man I have known for years. Yet, it was not shocking to me when Jay stated, “They say all this smoke is coming from Oregon fires. Yah. I bet all those people over there are sure glad they shut down the forest, that they lost all those jobs, so they can just sit and watch it all burn.” Then in uncharacteristic malice, he spat, “I hope they choke on the smoke.”

For Jay and other loggers I know, shutting down forests to logging in order to preserve timber or the habitat or migratory corridor of some animal means a loss of livelihood. For some, logging and hauling logs is the only work they have ever known and it has provided a good living. What makes good men so bitter? Fear of loss? Fear of change? Not one of them would admit to being afraid of nearly anything. Whatever they are feeling, it races from their pores in anger at the only enemy they can seem to name, “those damned environmentalists.”

These thoughts have become as heavy as my arms. I need a break from painting, so I climb down the ladder and venture out my back door.

Immediately, uneasiness overcomes me. The forest is eerily quiet. It has been this way for more than a month. A brief respite of rain a few weeks ago brought water to Blodgett Creek below my home, enough to allow faint gurgling sounds to reach my ears. Now, there is only deafening silence.

The Oregon grape and the snowberry have lost their leaves though it is only mid-August. The bunchgrass is so dry it practically turns to powder at the touch of my fingers. While a few chickadees still linger and an occasional hummingbird visits the feeder, most of the birds have gone to lower elevations where there may be more water and food.

The world has dried up and waits for just a tiny spark to end all that I know, all that is so familiar and comforting to me. I realize life is not about what you own. I know fire is part of the natural cycle of things. I understand worry will only get me an ulcer, not protection. Still, to lose these woods, to lose my home, to lose the keepsakes of the life our family has built for thirty-five years would be devastating – like losing a part of my soul.

A few feet from the east wall of the house stands the fir tree that was just ten feet tall when we built this house with our own hands. While installing the main line to the septic tank, the excavator wanted to just run over the fir. John convinced the excavator to leave it intact. Today that fir tree stands thirty feet tall. It shades the dining room window from the hot morning sun in August, where we sit at the table and sip strong coffee, eat farm fresh eggs and bacon, and read the newspaper. The birds – chickadees, robins, and woodpeckers – light on the branches above the catchment tank, swooping down to take a drink now and then before continuing their morning rounds. At least, they did. Today, the birds have gone and there is no need of the tree's shade. The smoke blots out the sun.

Farther down the north side of the hill under different fir trees is the place John helped me dig holes for insect fall traps for my Insect Ecology class project. For two

weeks, we walked beneath those trees, checking the traps, placing their contents in whirl packs to be identified and categorized in the lab later. One evening, we found a three-inch, long-toed salamander. He had fallen into the trap and died in the alcohol solution. Today, the salamander hangs in a 70% alcohol solution on the kitchen counter. Though it has been preserved and examined for more than two years by my granddaughters, it remains the first thing to fix their attention each time they visit.

Behind the house stands the Ponderosa pine the Forest Service would recommend I cut down. After the fires of 2000 burned 307,000 acres in the Bitterroot National Forest, the Forest Service drafted a hazardous fuels reduction plan and advocated for thirty feet of defensible space around all homes that, like mine, are in the Wildland Urban Interface. This P-pine is too close to the house for their standards. So close, in fact, we built the back deck to accommodate it. It holds one end of the line that suspends our bird feeders out of reach of the black bears that wander this ridge. It deposits pitch on the deck and in a strong wind, it bumps against the metal roof and curls the tin. Chickadees use it to store their winter food, burying seeds into the tree's bark. Looking at this tree now, I remember the Blodgett Trail Fire, one of many fires in the area in 2000. The fire burned three homes before the Forest Service could route it into the Selway-Bitterroot Wilderness to burn unchecked until winter snow doused the flames. I think of those homes and the people they belonged to each spring and fall as we rake and haul away pine needles and cones in an effort to comply with at least some of the defensible space recommendations. I wonder if the sound a fire makes as it rages across the landscape and jumps from tree to tree echoes the pitch of witch's laughter.

Out front, just outside the master bedroom window stands my favorite Ponderosa pine, another target of the excavator. John had it spared just for me. He remembered me telling him that as a child I always dreamed of a tree house, but never got one. I told him how cool it would be to escape to a place high up, where no one could find you, and you would be at home with the birds and the squirrels. Now every day, morning and night, this P-pine is the first and the last thing I see. In the morning, it casts long, spindly shadows from its needles into my room. Birds sing morning songs from this pine's branches in spring, summer, and fall through my open window. In the cold of winter, its evergreen boughs offer color and comfort, promising there is still life in the short, gray days.

As I head back into the house to finish painting, another check of the landscape reveals nothing has changed. I still must only imagine St. Mary's in the distance, the sound of birds in tree branches, the faint gurgle of Blodgett Creek at the bottom of the hill.

Back inside, I pour more not-quite-white paint into the tray and begin rolling the walls. The up and down rhythm sets the tempo of my wandering thoughts. I think of the way forest fires have changed through time.

In Pinchot, Muir, and Gunner's time, little research had been done on the role of fire in Ponderosa pine, Lodgepole pine, fir, and spruce forests of the Northwest. We now understand that fire should remain a natural part of every ecosystem. Large scale fires maintain entire ecosystems by removing undergrowth and competitors for soil nutrients and water resources, allowing the healthiest parts of the forest to thrive. Fires

also reduce ladder fuels, brush and other plants that grow tall enough to allow fires started in dead or dry plants on the ground to climb up the tree, creating a crown fire.

Native Americans used fires to clear ground for planting and to encourage berry growth in spring. While they often only burned in five-year cycles, more frequent than natural fires, this helped keep fire intensity low, due to less fuel on the ground.

By 1935 following Pinchot's lead, the 10 a.m. rule was put into effect. Every fire was to be suppressed by 10 a.m. the day following its initial report. This rule was meant to conserve forest timber for commercial use and forest enjoyment. Millions of miles of roads were built on the steep slopes of western forests to enable better forest management, making logging and timber sales an economic boon and to aid in fire suppression. This rule and its goals compelled my father-in-law up the ladder to his fire lookout station. Suppressing those natural fires, not allowing them to reset an ecosystem's natural processes, had effects that would not be fully realized for many years.

The exclusion of fire as a natural process on the landscape began what would become a disastrous sequence of events. Lacking the knowledge we possess today, the Forest Service placed roads for convenience rather than landscape considerations. Clearcuts devastated entire hillsides, leaving no vegetation to repopulate the area. At times, fires set to burn slash spread quickly to nearby, healthy timber stands. Sediment flowed into streams, diminishing fish habitat. The degradation of these practices were at first only apparent in the immediate area of operations, often hidden from public view by the surrounding forest or the operation's remote location.

While many still deny the reality of climate change, particularly in the Bitterroot Valley, its effects are apparent all around us. Fire intensity has obviously increased due to shorter, milder winters and hotter, drier summers. Without a week or more of below-freezing temperatures to kill larva, the mountain pine beetle is now able to complete two or three breeding cycles per year. These infestations of a native insect the size of a mouse turd wreak havoc in the forest, killing whole stands of pine. As these trees die, their needles turn from red to rust, then gray. Finally the needles fall and all that is left of a lush forest are gray skeletons, dry and ready for a spark to finish them off. Furthermore, the exclusion of fire has meant a build-up of fuels on the ground, creating ladders for flames to climb to the crown of trees. Today's crown fires are more difficult, more dangerous, and more costly to fight, as the flames ride the fire's own winds far ahead of the fire line on the ground.

Neighbors in the feed stores and garden shops talk of how they are planting their gardens earlier. When I permanently moved to the Valley in 1985, it was not uncommon for snow to remain on St. Mary's Peak into early July. Now, it doesn't even last through mid-June. We begin talking of snow pack in the fall before the first snow even flies. We wonder and worry what the next fire season will be like before we harvest this year's garden. When people complain of the cold or snow in winter, they often couple those remarks with, "Oh well. Maybe fire season won't be so bad this year. I hope not. I hate the smoke." It is no longer uncommon to have 100-degree days in early summer. Still, many believe this is just a climate cycle.

In 1972, the Forest Service abandoned its 10 a.m. Rule in favor of its Let It Burn policy. When and where it is "appropriate" to forest management goals, fires were allowed to burn. I remember at the time wondering who decided what was appropriate. Gunner felt as strongly about this policy change as Muir had felt about policies that were not protecting the forest. "What a bonehead move!" Gunner exclaimed. "Entire forests will be lost over this idiotic policy."

In 1988, Gunner got his proof. When thirty-six percent of Yellowstone National Park, about 793,880 acres, burned, the Let It Burn policy met with harsh criticism as America watched in horror and awe as Yellowstone vaporized before their eyes on the nightly television news, day after day. The policy held as mere days later, newscasts showed forest regeneration in the wake of the flames. Seedling sprouts assuaged the public's anger over the loss. Gunner shook his head, "Those pictures only show what is happening in open meadows where there is water and little timber to burn. It will be hundreds of years before Yellowstone recovers to the beautiful forest I remember, if ever. It certainly won't happen in my lifetime."

Late in the afternoon, my phone buzzes as social media alerts me the Canyon Creek fire is fully contained. Ten Forest Service firefighters had been sent to put the fire out, assisted by helicopter water drops, totaling 80,000 gallons and air tankers dropping more than 30,000 gallons of retardant to establish a perimeter. Thankfully, the Forest Service deemed this fire "appropriate" for suppression due to its threat to the City of Hamilton and Wildland Urban Interface residents like me. This knowledge brings a little relief from the fear – at least for now.

In 2015, fire ecology classes teach fires have morphed into monsters. The red and orange goblins race across the landscape, climb ladder fuels into tree crowns, then hurl themselves into the air ahead of the winds it creates. Spot fires can start miles ahead of the main fire by sparks hurtling on these winds. Despite millions of dollars, we still haven't realized the confidence of early Forest Service assertions that man has the ability to control and extinguish the demon of fire.

By 5 p.m., the laundry room is finished. As my attention turns to cleaning paint brushes, I think of what it takes to put out a forest fire – so many gallons of retardant, so many gallons of water from a parched landscape. Today, the Forest Service uses more than half (52%) of their annual budget (over $6 million in fiscal year 2015) to fight fires. According to the Forest Service website, the total cost of fighting fires will increase to 67% of its budget by 2025.I am shaken from these thoughts as I hear the dull drone of a heavy aircraft overhead. It makes me wonder if the Forest Service has sent a bomber to douse the flames of a fire I have not yet heard about.

I quickly check social media for any updates. One site reveals winds will be picking up and air quality is expected to deteriorate. "Great," I whisper to myself. Another site reports the Department of Environmental Quality has kept Hamilton's air quality status at unhealthy, with the expectation air quality will deteriorate further tomorrow. We will remain quarantined by smoke.

My mind is numb from thinking of 100 years of debate over forest management and worrying about something I cannot change. I love my home and all the family memories in it. I would hate to lose this place, to have so many memories torched. Yet

I cannot begin to unravel my own debate – why do I choose to live in a place that puts so much at risk, both for my family and any firefighters who would work to save it. I shift my focus to the only positive things I know: there are no reports of new fire starts in the area and this new paint color is really pretty.

I see a few spots I missed, climb back up the ladder, and roll some more Coconut Twist onto the wall.

water

The cure for anything

is salt water –

sweat,

tears,

or the sea.

Isak Dinesen

the embrace of water

a water meditation

If there is one element I relate to in a deep, visceral way, it is water. Whether the raging waters of a flooding creek or the trickle of a late summer creek in the West, if there is a way for me to be near water, I will find it.

In meditation, water is used as a focal point, a way to center our thoughts first inward, then moving outward. Water is a cleansing force, constantly flowing both in to and away from us. We begin a water meditation by thinking of all the fluids that are in our body, everything from saliva to sweat to bile to urine. Like the breath, water constantly flows in and out of the body.

Some meditations require getting into water, whether a tub, a stream, a river, or an ocean. As you feel it flowing around you, you imagine yourself as one with the water. You are fluid. There are no impurities, no boundaries. There is only flow.

Water is the first thing I listen for each time I step outside, its shine the first thing my eye alights on whenever it is present. It is as if water calls to me, as if I am part of it, bound to it by some unseen force. Each single drop of water is made by two hydrogen atoms attaching to one oxygen atom. In a split second, each atom separates and joins to different atoms; still, they remain water. This miracle, this mystery, holds me in its spell, enfolds me in the embrace of water.

i dream of water

But man is a part of nature,
and his war against nature
is inevitably
a war against himself.
Rachel Carson

Each spring, my husband, John, and I embark on a very unscientific mission. Like the snowmelt of the mountains, we follow our watershed flowing west from our Western Montana home to the Pacific Ocean. Our journey, like the water cycle, follows a specific route. The beauty of this passage became overshadowed, however, as I learned that this was a corridor of destruction, as well as possibility.

A talisman bought in a quaint gift shop on one such trip sits on the windowsill next to my desk at home. She must be an angel because she has wings. They are

made of tin, with indentations at the edges, stitches to hold them together. Her hair is brown, plated into double-buns on either side of her head behind her ears. From the front, they look like butterfly wings on either side of her face. A pink butterfly clip holds back the hair on her right temple. She wears a necklace of perhaps pearls with a two-hole button for a pendant.

Her eyes are brown, like mine, and her nose is long, like mine. Her lips are perfect and pink, turned up at the corners, not like mine. Her full-length dress is a mix of colors - the soft rose of a flower, the blues and greens and teals of water. Her hands are clasped behind her back. She seems to be leaning forward, to be whispering to me the words on her dress.

Dream big
Dreams,
unspoken or not,
are living whispers
inside our hearts.
Our whole life's potential
lies in the spaces
between these whispers.
Our dreams want us to say yes,
to speak their truth.
(Author Unknown)

Dream big, she tells me. She seems to believe I can. Sometimes I believe her. Sometimes I don't. Sometimes I do both in the space of a second.

No one really knows what makes us dream. Some say dreams are the stories our sleeping mind tells us. Others say dreams are a way to connect with something that is troubling us, helping us through seemingly unsolvable problems. When I dream, I

dream of water. Sometimes blue. Sometimes brown. Sometimes clear. But always water. Sometimes in my dreams, angels admonish me to dream about water.

I don't know much about my angel. I only know she waited for me. The first time I met her, she sat on the shelf near the entrance of the shop. She spoke her words directly to me as I walked in the door of Illingworth's By the Sea. I picked her up, read and re-read her message. She resisted being sat back on the shelf and I resisted putting her there, but my Scotch heritage forces me to never consider buying anything without a price tag clearly visible. I always think no price indicates that it's too obscene to reveal to the world. I forced myself to move on.

We were not in a hurry that day, John and I. We'd come to Nye Beach on the Central Oregon coast for a much needed and deserved break. We browsed through the shop. The kitchen section highlighted roosters, chickens, and egg cups with roses on them, all sitting on a white, weathered sideboard. The garden section featured frog statues, sun catchers, and high-end, ceramic plant stakes. Such breakable trinkets would never survive in my garden. The children's section offered up-scale Easter bunnies and Beatrix Potter art. Back at the front of the shop, gourmet chocolates broadcast their sweet scents to lure customers to their decadent case. A small, plain cubby held all the cards, as though they were an afterthought to gift-giving extravagance. The jewelry case sat beneath the counter where you made your purchases, tempting buyers with sparkle and dazzling colors. I paused at the door, returned to the angel, read her message once again. Even as I exited and walked

across the single-lane, cobblestone street to The Chowder Bowl for lunch, I couldn't stop thinking of the angel.

The night before we left the coast for home, I dreamt of the angel. In my dream, she was life-sized, standing in the ocean waves in front of me. The words were no longer on her dress, but coming from her lips. I could not make out what she was saying. Only the words "Dream big" were clear. I awoke to the sounds of the surf and the smell of the sea. The curtains fluttered on the sea breeze.

A year later on the next spring break, my husband and I escape the teasing spring of western Montana and head to the Pacific once again. We leave our Bitterroot Valley home at 5 a.m. Once we reach the I-90 on-ramp in Missoula, I turn west, pushing the gas pedal and the speed limit as hard as I dare. For now, we follow the Clark Fork River. By nightfall, we will have chased the sun into the Pacific.

Almost three hours later, we climb the long hill up and out of Spokane and begin to pass vernal pools, shallow depressions where soils have impermeable hardpans or bedrock. Snowmelt and rainwater collect in these depressions, enticing birds on spring migrations. Straining our eyes to focus at 70 mph, we don't see any Sandhill cranes; they have probably moved through by now. On one pool, a pair of Canada geese rides the water's surface, perhaps moving through or perhaps looking for a place to nest. If it's the latter, hopefully all the water in the pool will not have evaporated by mid-summer when their goslings fledge. When we return, we will look for more ducks, herons, cranes, and avocet. "Up ahead on the fence!" John excitedly points. "A Western meadowlark!" As one of our indicator species for the arrival of spring, this meadowlark

sings in a landscape situated on the opposite side of the rain shadow we just exited, a landscape at least two weeks further into spring moisture and temperatures than home.

West of Spokane, we begin our trek across the channeled scablands of eastern Washington. This region is characterized by elevated, rocky tracts of land with little or no soil cover. Often these tracts are isolated by post-glacial, dry stream beds. A little later in the spring in the places where there is soil, native, cool season grasses like Great Basin wild rye, Needle and Thread grass, along with other grass species sometimes labeled invasive or noxious such as Stiff needle-grass, Squirrel tale grass, and Foxtail barley will appear. Today's early spring view offers mostly the unidentifiable green shoots of these favorites and the leftover tan hues of their dried, windblown ancestors. A little maroon waves in the breeze, signs of invasive, ubiquitous cheatgrass. A beautiful, if not compelling landscape, John drifts off to sleep. Spotty radio reception pushes my wandering mind to recall the massive Ice Age floods, natural destructive forces that created this beautiful, dramatic landscape.

Over 10,000 years ago during the Pleistocene, a finger of Cordilleran Ice, perhaps thirty to fifty miles wide, reached south into northern Idaho near present day Lake Pend Oreille, creating a dam. This dam blocked the Clark Fork River's canyon and stopped its flow across the Columbia Basin and into the Pacific. Behind that 2,500-foot-high ice dam Glacial Lake Missoula was formed. At its peak, the Lake reached an elevation of 4,200 feet. Missoula mountainsides are still etched with strandlines, the ghosts of temperature and shoreline fluctuations. The Lake surface would have covered 3,000 square miles, extending east to Deer Lodge, north into the Flathead, Thompson Falls, Mission, and Clearwater Valleys and south to the end of the Bitterroot Valley.

The weight of all that water behind the ice dam exerted tremendous amounts of hydraulic pressure on its base. More than forty times, the dam hydraulically fractured causing landscape-altering floods. When the dam finally completely exploded, a catastrophic flood, 200 to 400 feet deep, ripped across the land approaching speeds of 65 miles per hour when confined in channels, carrying ice, boulders, and debris. The outburst plundered the top layer of loess (wind-blown silt). The torrent gouged channels through the land, stripping the Earth down to the basalt bedrock. In many places, even the basalt was ripped away, leaving a scabland of potholes.

As we exit I-90 and head southwest on Route 395, we follow the flood's path. Glacial erratics - large, out-of-place boulders of metamorphic and sedimentary rock like argillite from Montana – dot the landscape. In the wake of the floodwaters, a dramatic plateau of butte-and-basin, channel-and-pothole scabland remains. Sagebrush and bunchgrass shake in the ever-blowing wind of this shrub-steppe ecosystem. We trace along railroad tracks toward the Central Columbia River Basin. Mile after mile passes. We see no animals along this route – ever.

Closer to the Tri-cities, Richland, Pasco, and Kennewick, some of the buttes are topped with freshly planted crops too young to decipher their type, just the dark green of youth and fertilizer juxtaposed against brown earth. Patches of sand dot the landscape. Tumbleweeds roll and bounce across the highway like giant, brown balls, only to collect in a tangled heap on the fence lines.

Nearing the Tri-cities, the land flattens out a bit. At the confluence of the Yakima, Snake, and Columbia Rivers, this semi-arid landscape transforms into agricultural land thanks to irrigation. Wheat fields atop the buttes give way to potato and onion fields.

Apple and grape orchards pop up. Winery and fruit stand signs beckon traveler's taste buds and promise to ease your boredom.

We press on, crossing the Columbia into the heart of the Tri-cities. In the twisted maize of routes, poor signage, and corkscrew turns to navigate one metropolis, we are never quite sure which city we are in at any given moment. Nearing the far edge of the conglomerate, we stop for gas and a quick lunch.

Not quite half way to our destination, I get excited for the next leg of the journey. We still have a good deal of open, arid land to traverse, but soon we will be driving alongside the Columbia River. I will be near water.

In the empty lot next to the gas station, we angle the car to cut some of the constant wind, sit on the bumper and munch celery and peanut butter, carrot sticks, and an apple. We absently talk of random things: how it will be fun to spend time with John's brother, Pat, and his family at their Siletz River property; how we will look for a cast iron ship's bell to mount on our deck so I can call John home when he wanders up the canyon with his fishing rod but without his cell phone; how on a rainy evening we will have a picnic on our hotel bed, eating smoked steelhead and salmon, cheeses, artisan bread, and drinking Oregon Pinot Noir; how we will walk the beach, hand-in-hand, like lovers do.

It's John's turn to drive now. He asks me to find a radio station as he begins the long pull up out of the depression of the Tri-Cities. "Stop," he says, as I pause on a Spanish station playing a song we remember from our high school days in southern Arizona. We sing the love song of a man on a big ranch and a little-rancher girl,

somewhat off-key, smiling. “Alla en el rancho grande, alla donde vivia, habia una rancherita, que alegre me decia; que allegre me decia.” I laugh as John adds his own flair, “Ay Ay Ay!” and rolls a long rrrrrrRRRR. This is how we start our trek over the plateau, turn south on I-82, and head for the Columbia River Gorge and I-84 that will take us west to Portland.

We soon tire of listening to Spanish music, realizing our Spanish language skills need refreshing. With no other clear options, we just turn off the radio and let our thoughts wander. My thoughts flow upstream.

I think of the Hanford Site, behind us just beyond the Tri-cities, a 583-square-mile part of the Manhattan Project. This plutonium-producing facility had nine nuclear reactors next to the Columbia River, its water used to cool the reactors. The facility continued its operation through the Cold War. Production halted in 1989 and cleanup and restoration of the site began. The site held 43 million cubic yards of radioactive waste and more than 130 million cubic yards of contaminated soil and debris. Roughly 475 billion gallons of contaminated water had been discharged into the soil, contaminating the groundwater beneath the site and over 80 square miles surrounding Hanford, a human-created threat to all that lies downstream. The US EPA has declared the Hanford cleanup one of the largest, most complex cleanup projects in the country’s history.

The project has been plagued by mismanagement and complications. The portion of the project dedicated to treating the toxic liquid which today still leaks from underground tanks is nearly hopelessly bogged down and it is estimated that an infusion of millions of dollars and more than twenty more years will be needed to bring

the cleanup to completion. Some in the region question whether completion is even possible.

The Hanford Reach National Monument sits on 306 square miles of reclaimed ground on the site. All along the banks of the Columbia River inside the Monument boundary access remains restricted due to its contamination of groundwater. I try to understand how we can make a national monument out of a layer of soil thinly veiling deep layers of contamination just beneath the surface. I wonder about the quality of the drinking water in the Tri-cities. I remember a park we passed where children played and drank treated water from fountains and I wonder if I would trust that water if I lived there.

We pass through rolling hills, where straight rows of hybrid poplar sticks stand like an army at attention in straight lines perpendicular to the highway, stretching as far as the eye can see. These uniform, linear forests in the desert will give their lives as lumber, wood chips, and jobs. I drift off to sleep and dream of soldiers watching children drinking invisible black goblins from fountains, cancers that start to feed on their host.

I startle awake, shiver, and look out the window for water and signs of life. We are nearly to the I-84 junction, skirting the Umatilla Army Depot. For many years on this route, we thought this was just an old, mostly abandoned munitions depot. I try to put the nightmare image out of my mind, to focus on life-giving water as we cross the Columbia River into Oregon. This glimpse of the Columbia is short-lived and my mind remains stuck on the fact that we are travelling a corridor of life-giving water, at least if it's not contaminated with the by-products of war and man-made annihilation.

Opened in 1941, the Umatilla Chemical Depot's mission was storing and maintaining military equipment for World War II – everything from blankets to ammunition and chemical weapons. Sarin, also known as GB, was stored in ton containers. This organophosphorus compound is a nerve gas, lethal at extremely low concentrations, with death occurring within one to ten minutes after inhalation. Even a non-lethal dose can cause permanent neurological damage. Another nerve agent stored in ton containers at the facility, VX is also a tasteless and odorless liquid. Mustard gas (or sulfur mustard) was stored here, too, an agent that forms blisters on exposed skin and in the lungs.

This U.S. stockpile of weapons of mass destruction (WMD) was destroyed using high-temperature incineration between 2004 and 2011, in accordance with the Chemical Weapons Convention, an arms control treaty (1997). The process was monitored by the Organization for the Prohibition of Chemical Weapons, an international monitoring agency based in The Netherlands. I think of how we hadn't begun destroying these WMD's when the 9-11 tragedy took place in 2001. We hadn't started when we went into the second Iraq War in 2003, searching for Saddam Hussein's WMDs. Row after straight row of supposedly empty hummocks stretches to the horizon. I try to focus on the fact that these chemical WMD's of the U.S. are all destroyed now, as I speed toward the coast and my vacation.

We will soon drop off this plateau and back into the Columbia River Gorge. The water will provide a change of scenery and, hopefully, a change of focus. I will watch for birds, see where families are out on boats fishing, and scan hillsides for blooming

wildflowers. We will race tug boats pulling barges filled with grain, onions, potatoes, and timber down the Columbia, all of us headed for Portland.

The Columbia slices through the Cascade Range, creating a nearly sea-level cut. Two distinct climates clash in the Gorge: the warm, arid air from the east and the cool, damp air from the west. The resulting thermals create some of the best windsurfing, kite boarding, and paragliding conditions in the world, not to mention winds that drive the blades of thousands of wind turbines on the Oregon and Washington sides of the Gorge. Some of the largest wind farms in the country sit here, some generating as much as 600 megawatts of green energy. Not without controversy, these wind farms create a Don Quixote-esque viewshed as they ever-so-slowly twirl in the wind. The mile-wide Columbia is in full view now, and I can feel myself relax.

Nearing the Celilo Falls exit, I tell John the story of this area. He listens closely, because it is a fishing story. The Nez Perce, Umatilla, Warm Springs, and Yakama tribes called the Columbia *Nch ĭ-wána*, The Big River. Before dams were built, the river once dropped more than eighty feet in the half-mile leading up to its constriction at Celilo Falls, creating a raging torrent. The area was one of the most significant fisheries in the Columbia River system, and served as a major trade center, drawing tribes from as far away as the Great Lakes and the Desert Southwest, present-day Alaska and south to California.

Salmon remain an integral part of tribal culture, religion, and sustenance. The story of the salmon goes like this. As the Creator prepared to bring people forth onto the earth, he called all the animals and plants together for a Grand Council. Each

animal and plant was to offer a gift to help the humans be able to survive. Salmon came forward first, offering his body to feed the humans. Next, Water came forward, offering itself to be a home for Salmon. All of the other plants and animals came forward to offer gifts to help the humans survive. Because Salmon and Water came forward first, they received a place of honor at traditional feasts throughout the Columbia Basin, a tradition still practiced today.

Whether from a scaffold or a rock outcrop, families fished from the same sites as their kin, generation after generation. As a salmon, whether chinook, coho, sockeye, or steelhead, or perhaps a Lamprey eel, was caught in the net, the strong fishermen bent at the waist and hauled up the catch, weighing as much as fifty pounds or more, onto the platform. Much of the entire year's provisioning came from the salmon harvest.

When homesteaders followed the Oregon Trail to the area to try their hand at farming on the arid hillsides above the mighty Columbia, Indians were removed to reservations, far inland from their traditional fishing sites, compromising not only their culture and religion, but also their main source of sustenance. To further aid homesteaders, the federal government proposed a dam at Celilo Falls. Tribal testimony against this proposal was ignored. In just under one hundred years, a culture and way of life had been killed, drowned in the name of progress.

When The Dalles Dam was completed in 1957, 10,000 people gathered along the Columbia east of The Dalles to watch the birth of Celilo Lake and the death of Celilo Falls. In the name of development, the U.S. drowned an entire culture. Just four and a half hours after the dam floodgates were closed, the reservoir behind the dam was filled and Celilo Falls disappeared from view forever.

Salmon runs continue to decline due to hydroelectric development on the river. Migrating salmon must pass through as many as nine dams and impoundments before reaching their spawning grounds upstream or the Pacific downstream. The salmon and the Native peoples struggle to thrive in waters designed for maximum power output.

The River seems to echo the mood of this story. The Columbia, usually wind-whipped into a frenzy of white petticoats in a wild dance, lay like a mirror, prostrate on the ground, reflecting the sky and spring-green hills with such intensity I feel dizzy. It feels as though the Earth cannot decide whether to be upside down or right side up. I have never before seen the Columbia so still in worship of the sky and the landscape. It is both beautiful and somewhat terrifying.

We exit the freeway at Hood River and head downtown. We park a few blocks away and walk downhill to our favorite build-your-own taco bar. We take a seat by the open garage door at the front of the restaurant, to people watch and enjoy the sunshine. We shut the sad history of the area out of our minds. We remind ourselves we are on vacation. We don't have much time if we are to make it to Nye Beach by sundown. We speed walk uphill to the car, head to the other end of town, gas up, and I take my turn at the wheel.

We push past Multnomah Falls. There's no time to stop for ice cream today. As we near Portland, the River hides from view behind tall trees and commercial buildings. The traffic steadily increases. In a route we have memorized through many trips over many years, we take the 205 around Portland and, a few miles of bumper-to-bumper traffic later, merge with the I-5. John tries to watch the highlights of the artificially fertile

soils of the Willamette Valley pass by, but he also tries to help me drive, grabbing the handle above the door, stomping on the invisible brake on the passenger side. I ignore him. I have never had an accident, ever, I tell him.

We exit the Interstate at Highway 20 and head west. We are chasing the sun toward the horizon in earnest now. We don't talk. It's been a long day and tempers are on a hair trigger. We pause to switch drivers in Corvallis, then push on. This narrow, winding route has become like an old friend, someone we know and want to see, but not for too long. I watch the light fading above the tree tops. Each of us takes turns sniffing the air, thinking the other doesn't notice, competing to be the first one to smell the salt air pushing inland through the canyon. It won't be completely dark when we arrive, but we talked this morning of seeing the sun set on the Pacific tonight. Gas mileage isn't a concern, as John pushes through the short, straight stretches only to hit the breaks for the tight turns. Our only concern is this race to sunset.

"I think I smell it. Do you?" John asks.

"Maybe," I sniff, pulling air deeper into my lungs. Do I? Or do I just want to smell it so much that I imagine I do. I care and I don't care all at once. In this moment the only thing that matters is seeing that sunset.

In this strange race only the two of us understand, we chase the sun. The bright tangerine orb is a beacon, guiding us through canyons that smell of deep time and hummus, of decay giving way to life. Just as the sky turns to a pale yellow glow, we burst out of the last canyon and are greeted by the day's last salt breeze of the ocean and the sun's promise that it will return.

We rush to our favorite cafe for a cup of the best clam chowder we have ever found on the planet and fresh fish and chips. In this small, crowded, wait-listed, out-of-the-way place, we sit in a quiet corner, smiling, indulging, happy. We savor long swallows of Rogue Ale Brewery's Dead Guy Ale. We breathe deep.

Our room at The Whaler is on the second floor. We spend the morning watching the waves, drinking coffee to ward off the chill of the gray day, lightening now. Boats small and large come close in to shore and rock and dip on the swells. John takes a walk on the beach in search of art and solitude. I pick up my pen and it feels like an old friend. The ink and my thoughts glide across page after page, as pent up words, emotions, and thoughts - not assigned thoughts, but my very own - ebb and flow, like the waves I encounter each time I look up from the page.

Ahh. This is break time. I can still write! The fear that has gripped my soul, as one school assignment led mind-numbingly into the next, squashing creativity in favor of letters that do not communicate meaning, just grades - that fear has vanquished in salty humidity and the soul satisfaction of being near the sea, writing.

College in my fifties has been challenging, to say the least. An assignment that is a basic refresher for most students represents a full-blown research project for me. A lot has changed since my previous college years.

Before I had the angel to remind me to dream big, to never settle, to always press forward, I had my best friend, Patti Furniss. Patti was my real-life angel of sorts. When I confided in her – about how I felt utterly lost at times, about my doubts about

going back to college, about being able to complete a degree – Patti said, “You just need to define your purpose.”

Patti became my self-proclaimed and enthusiastic cheerleader in this quest for a degree. The oldest of eight siblings, Patti had honed her organizational and people skills. She knew how to get to the bottom of things, how to move any situation forward in a positive way. She volunteered to help me.

Patti called me. She listened. She read my work, checked on me. She told me funny stories to give me the strength of laughter. She even insisted I have a social life.

One night at dinner, Patti revealed she’d found my purpose. “Write. Educate. Water.” There was a lengthy pause after each word to let it sink in. These words identify the things that are important to me, the things I care deeply about. These words became my mantra. “Write. Educate. Water.” I repeat them to myself walking across campus past all the twenty-somethings, so sure of themselves.

Patti has passed from this world, but I still hear her voice in these words. Write. Educate. Water.

My mind and pen wander to yesterday when, along the Columbia, I had stated, "I love the West." John asked me why. Just then, a color I had never seen appeared on a hillside as we rounded a turn. The bright blue of a clasp of flowers, unidentifiable at sixty-five miles per hour, waved in the wind. In that same moment, just a bit farther, John spotted Mountain Sheep, several rams, grazing on the new grasses. As the thrill of those two things quickly passed, I said, "That is why. It is mystery. It is always and never the same. There is always something new to see, some way the landscape

morphs that is new and old at the same time. Wondrous and scary. Wild and peaceful. Always changing and always the same." As we drove on through the rugged land, where the Columbia cuts the landscape like a knife, green near water, browns everywhere else, the contrast was obvious. Two elements, water and earth. Two colors, green and brown. Two people, a dreamer and a realist all in one –me.

"I like the way you are near the water," John had said with a smile.

"What do you mean?" I asked.

"Happy. Peaceful." He reached over, rested his hand on my leg.

After ten pages of my journal are filled with this recollection and thoughts that have nothing to do with school and everything to do with water, I realize I am happy and exhausted. I lie on the bed, staring out at the ocean. I think of the irony of peace amidst hidden destruction. I drift off and dream I am lying on the ocean, bobbing on the waves. I dream I am a mermaid.

In the afternoon, the sun shines, the water appears blue instead of gray. We head for the beach to revel in the sunshine. Dogs chase balls and Frisbees. Children play tag with waves. Teens climb rocks. Adults fight to keep balance on slippery rocks to get a better look into tide pools. Three people launch kites: a dragon, a butterfly, and a diamond.

John and I find a nook that blocks some of the wind and sun ourselves like lizards on a big, bleached driftwood log. Content and warm, I drift off to sleep again, lulled by the sound of waves and the smell of the sea.

When I awake, John has placed an offering at my feet, a collection of small driftwood and shells. He has walked to the edge of the water and stands silhouetted against the lowering sun. I wonder what he is thinking as he stares out to sea. He is fascinated by boats and I wonder if he daydreams of sailing away west, daydreams of being a sailor, the way I dream of water.

Once he notices I am sitting in the sand, leaning against our driftwood, examining his gifts, he comes back to me. We smile at each other and he takes a seat beside me, puts his arm around my shoulder, kisses me on the cheek.

"What were you thinking about?" I ask, though I know what he'll say.

"Oh, nothing. Just looking," he replies.

I decide not to prod him. Unlike me, John keeps a great deal of his thoughts to himself.

As the sun sinks into the sea, we clasp hands and head toward Nye Beach. We walk up the cobblestone street, and he pulls me toward the gray shake exterior of Illingworth's. "Don't you want to go eat?" I ask. "First, I want to get your anniversary present," he responds. It takes a few minutes before we find the angel. She is the last one left in the shop. She is tucked away, back in the garden section, hiding, waiting for me.

Once John has paid a price I am not allowed to know, he hands me the bag, kisses me, and whispers, "Happy Anniversary." We head across the street to The Chowder Bowl and dinner. The angel will sit with us as we make dinner special with a dessert of warm bread pudding with brandy sauce. One serving, two forks.

I don't hear him get out of bed later that night. I awake to his kisses on my cheek. He says nothing, grasps my hand, and pulls me out onto the patio. He wraps me in a blanket and helps me into the chaise lounge.

The night is crisp and clear. The creamy yellow full moon is setting into the crystal sea, casting a narrowing band of light toward shore. A small city of fishing boats and trawlers lounges lazily on the water. As one boat appears around the spit out of Yaquina Harbor, another boat drifts off the earth on the horizon. The soft sound of waves lapping the shore reaches us through the still night. Silently, we sip champagne, side-by-side, and watch the moon disappear into the sea.

We manage to keep our promise not to think of school work over the next nine days, almost. Each day, we walk the bay front and the beach, holding hands. We eat too much. We laugh too much. We snuggle, but never enough. We go to thrift shops, art galleries, and nowhere in particular.

The night before we head home, I fight sleep. The curtains are wide open and I stare out at the sea as long as I can keep my eyes open, memorizing the light and the colors, memorizing the smell of salt water, memorizing the way I feel when I am next to water.

I startle awake to the sound of the alarm. Thermos filled, we head east. We are being pushed homeward by a tailwind, riding ahead of a storm that will bring moisture and spring flowers to our Montana home. When we get to the freeway an hour later, I cannot keep my eyes open anymore. John drives and I fall asleep. I dream I am back in the hotel bed, staring at the sea. I dream I walk down to the beach. I dream I swim away into the Pacific.

Later when I take my turn at the wheel and John dozes, I think of John Muir's words, "When we try to pick out anything by itself, we find it hitched to everything else in the Universe." A watershed makes it clear that there is always someone who lives downstream, who must deal with what is sent to them, what is out of their control. Like it or not, this is cohesion.

We retrace the water course going east, back through a corridor of beauty and destruction, power and impotence, progress and hypocrisy. I am still vacillating between the extremes, trying to understand my place, my power, in the midst of the whole.

A tail wind blows the three of us, John, the angel and me, inland, back to reality. Back to dreams of water.

earth

Those who

contemplate

the beauty of the earth

find reserves of strength

that will endure as long as life lasts.

Rachel Carson

mother earth

an earth meditation

We are made of the dust of the earth. The foundation of our very lives rests upon the earth. Everything solid, everything resistant defines our form.

In meditation practice, we begin our earth meditation by noticing the solidity within our own body. Our skeleton, these hard bones, provide the framework that holds our bodies together. As we move outward in our thoughts, we feel ourselves sitting on a floor, the ground, or a bench; we feel the solidity beneath us. As we walk upon the earth, we do not sink; the earth is strong enough to hold us. The earth is also generous enough to take us back into its folds when we sluff skin cells or hair follicles or breathe our last and return to dust.

The Earth – she is our mother.

subsistence on earth

Earth provides enough
to satisfy
every man's needs,
but not every man's greed.
Mahatma Gandhi

We view Earth as something solid we can depend on, something the essence of which does not change, something that provides a solid foundation. In reality, Earth constantly changes in dramatic ways; it's the timescale that can throw us off. The Earth changes slowly, so slowly, in fact, that most often we hardly notice it. We don't think of plate tectonics until an earthquake reminds us that life on earth can dramatically change in one, nearly instantaneous, catastrophic event. We almost forget about the molten core of the earth, swallowing some mountains into its inferno, while pushing others out, into the atmosphere, in slow, yet near constant force.

While the Earth is several billion years old, human life lasts only an average of seventy-one years. In our lifespan, it is often easy to see if not understand the big shifts. Where we often fail is in recognizing the subtle changes in our own lives – the changes that lead to big shifts in knowledge, in thinking, in understanding the place we call home.

My home sits on a glacial moraine in the Bitterroot Valley of Western Montana. Over 10,000 years ago during the Pleistocene epoch, the temperatures would have been much lower, glaciers would have dominated the landscape, and the surface of Glacial Lake Missoula would have been roughly 200 feet above my rooftop. This house is not where I started my relationship with these mountains, with this valley. A lot has happened in the last thirty years.

When I moved to the Bitterroot Valley in the winter of 1985 with my husband, John, and our first child, Brian, I didn't know I was moving in to a valley carved by glaciers and flooded by water through deep time. I only knew that compared to the desert southwest we had just left, this valley could give me seasons, snow-capped peaks, and the beauty of thick coniferous forests. I only knew the valley felt rural, with small towns dotting the only corridor, Highway 93. The people were friendly and welcoming. This was a good place to raise a family.

We purchased an acre lot just north of Victor, along the braided Bitterroot River. Unlike me, John learned practically from birth to love the outdoors, the land, and to garden. What I lacked in knowledge, I made up for in enthusiasm. Undaunted by ignorance, I fell in love with our place with its ubiquitous knapweed and a mere six inches of top soil resting on clay and glacial till. I knew from smatterings of alfalfa that

this land had been productive. I did not realize that the productivity had been due to chemical enhancement, nor did I understand the link between these chemicals and rising cancer rates across the country and around the world. I only knew what I gleaned from skimming John's books and his Dad's 1930's USDA pamphlets on subsistence farming. Through the illiteracy such romantic notions can inspire, I sat down with John and we made a plan.

We would build our own two-story home, 675 square feet per floor, one and a half times bigger than the home we had built and sold in Arizona. The only work we contracted was the well, the septic, and the digging of the foundation. The rest of the work we did ourselves, with occasional volunteer help from some of our new friends, and my in-laws. Neighbors just showed at opportune times, like when 87-year-old Harry Wolters came with his carpenter's apron and hammer, never spoke a word, just started nailing together the walls John had laid out on the ground. Almost every week night after John got off work at Alpine Log Homes, we met at the property, shared a picnic dinner, and began our work. Every Saturday and most Sundays were work days as well.

Our son toddled around in the dirt. If he tried to wander off, we put him in the giant playpen made by the four foot deep hole that would be our crawl space and root cellar. When John was just too tired to continue, we would stop, sit in the shade of our 1972 green and white Chevy pickup, sip beer, and look up at the Bitterroot Mountains, or down to the River. Brian would fall asleep in my arms. We were reluctant to go home to our rented trailer in Hamilton. This land was home.

By Thanksgiving, the house was dried in. The main floor was insulated and dry-walled, so that is where we lived. The dining room was our bedroom; Brian's crib sat at the foot of our double bed. There were no cabinets, just a makeshift counter top made of the plywood we had used for foundation forms, topped with contact paper. We had running water, but not hot water. The only heat we had, which was also how I made most of our hot water for bathing and dish washing, came from the wood stove. It was somewhat of an oversight that I could not light a match.

That first winter I climbed a steep learning curve. By the time a gray January set in, I craved the sunshine and warmth of the desert. In my third trimester of my second pregnancy and with an active toddler, our somewhat primitive circumstances proved difficult. I dreamed of the garden we would plant in the spring. When the baby came and the temperatures plummeted far below zero, I spent long hours in the swivel rocker next to the fire, rocking our daughter through her period of purple crying, stoking the fire, and watching our son play on the floor. I would stare out the window at a landscape of snow and white mountains and drift in and out of sleep. I dreamt of spring, sunshine, and warmth. I dreamt of our garden. We weren't just building a home. We were part of a larger community, not just of people but of interconnected systems of life. I needed to get acquainted.

The Bitterroot Valley sits on the eastern edge of the Idaho Batholith. Roughly seventy million years ago, molten granite pushed through the Earth's middle crust and cooled. A large portion of what was on top of those intrusions slid off the top of the bulge they created, crept along east at less than glacial speed, stopping to become the

Sapphire Mountains. Glacial erosion during the Ice Ages scoured the landscape into cirques and steep canyons and cut mountain tops into razor sharp aretes and horns.

This topography precluded many of commercial extractive industries which came on the heels of Manifest Destiny. Mining was never pursued in the Bitterroot. Logging was kept mostly to the foothills, which were denuded of timber. Copper King Marcus Daly cleared the valley and foothills of timber, both from his own land and that of others, the latter at times without permission or payment. Millions of board feet of timber were shipped by rail to Butte for mine timbers or to Anaconda to feed smelting fires. All of those operations were owned by Daly. Despite his assaults on above-ground resources, the Bitterroot Mountains stood firm.

When that next spring finally arrived to those mountains, John's parents came out from Hamilton to help us put in our first garden. As someone who likes order and visual balance, Dad's insistence on stakes and strings for perfectly straight rows made sense to me. John followed a ritual he knew from childhood, taking it all in stride. I grew frustrated with Dad's insistence of strict adherence to the recommended seed depths on the packages. It hadn't sounded quite so compulsive in those books I had read.

When the task was complete and the promise of sustenance lay beneath dark rich earth, we all sat down in lawn chairs. Dad looked west to the Bitterroot Mountains. In a mantra he would repeat many times in the coming years, he said, "No more than three miles as the crow flies is wilderness. They aren't making any more of that and they aren't making any more land." It would be years before I would understand the significance of Dad's statement.

We eventually moved the garden to take it from 480 square feet to 4,000 square feet. We had nurtured the thin soil with a pasture mix of red and white clover, fescue, and timothy. Our dozen Rhode Island Red chickens, three Targhee sheep, and three Toulouse geese took turns playing in that mixture, fertilizing it. When we tilled all that in, we put up an electric fence to keep the whitetail deer out. We kept a chase of pasture mix around the outside of the garden for our animals.

The new garden spot was bountiful. From that garden in our best year, I canned 125 quarts of green beans, fifty quarts of salsa, fifty quarts of stewed tomatoes, and another fifty quarts of tomato sauce, all from our red, ripe tomatoes. I also dehydrated 100 pounds of tomatoes and gave countless pounds away. We stored 350 pounds of potatoes, and fifty pounds of onions. I made seventy quarts of pickles. We ate cucumbers at every meal. One day I saw one of the children harvest an armful of cucumbers, all they could carry, glance at the house to see if I was watching, then throw them over the fence to the chickens. I got the message.

We ate bok choy and beet greens and zucchini to our fill and beyond. Our children did not like beets so we ate what we could, gave away beets until people asked us to stop giving beets to them, then used them to supplement the chicken feed. When we couldn't give away any more zucchini, that went to the chickens and geese, too. The turnips ended up going to the animals after they were infested with some kind of root maggots. I made and canned seventy quarts of raspberry jam. We imported twenty-five pound lugs of apples and pears, usually five lugs of apples and three lugs of pears, from Washington through friends who used those sales to finance their trip to

visit their family there. I canned cinnamon apples, pears, pear butter, apple pie filling, and applesauce.

By early-October and with homeschool in full swing, I finally declared canning to be over. When Dad brought a full lug of Italian plums from his own trees, they went into the vegetable crisper in the refrigerator. I took a break from baking cookies as snacks and we instead ate the delicious fresh fruit. I was grateful for the plentiful reward for our hard work, but I'd had enough. We got leaves from friends and John's folks and covered the carrots in place with twelve inches of mulch. We dug fresh carrots all winter.

We had cared for the land. Little to no chemicals were ever applied to the ground that we worked so hard to love and nurture. It, in turn, provided for us, other families, and our animals. With three children now, the house finished, and our garden and animals doing well, we had more time to explore.

Many evenings we drove into the mountains and the Bitterroot National Forest. We cut and hauled fence rails. We played in Big Creek. We spotted moose, elk, mule deer, and black bear. We caught a blue-tailed skink and kept it for a pet for a while, until the day we took it back to its home and set it free. We left our mountain playgrounds in as good a shape or better than we found them, at times hauling garbage from careless partiers and campers home for disposal.

While many of our friends hunted in the mountains, John got the bulk of our meat from the river bottom. I became the queen of venison. We cut and wrapped our own. John did venture in to the mountains with his Dad for elk or over the Sapphires to hunt

antelope. Our protein needs were seldom met from the grocery store. Our dream of food subsistence from an acre of ground gave us great satisfaction.

As a homeschooling family, I wanted our science to be experiential and outside as much as possible, especially when the children were young. Our classroom became the river bottom behind our house. We made casts of animal tracks and kept a collection, complete with identification. Sometimes, bleached skulls accompanied the plaster casts. We identified birds, bugs, plants, snakes, lizards, trees, brush, everything we could. We learned that like our family, everything fits and works best when every part works together. Some of the children's science projects took first place in our homeschool group's science fairs, and I felt as though I had accomplished some of the most important work I would ever do in my life.

There was a rhythm to life now. We had perfected our system. Winter days were filled with school work and planning. Spring meant new chickens and whatever else we might add to our menagerie, along with the excitement of planting the garden and watching promise sprout from the soil. Fall would bring us back to the routine of school and canning, home and sustenance. Summer promised adventures: camping, travel, picnics, fishing trips, exploration.

The children and I accidentally spent most of one summer on the edge of the wilderness, where we would learn new lessons. I had taken a job teaching a teen girls camp on a guest ranch. It was only supposed to be a weeklong stay. We headed up into the Dearborn country, west of Augusta, Montana, on the edge of the Scapegoat Wilderness. I taught classes, counselled the girls, and helped with chores during the day. In the evening, we built campfires and told stories. I played guitar and we sang

until the flames died down. Late at night, when the dorms were finally quiet, I would sit on the porch of my cabin alone. The silence was like a blanket, soft and warm. I had seen stars in the desert and I had seen stars at home in the Bitterroot, but here on the edge of the wilderness, they seemed to have multiplied beyond comprehension. I had never before experienced the kind of indescribable peace I did on the edge of the wilderness.

The children were having such a great time, I volunteered to stay and help out on the ranch after that camp. John stayed in the Bitterroot, working and taking care of things at home. While the children rode horses and played in the Dearborn River, I helped oil log cabins, paint the bath house, mow, clear brush, and more. At night, after the work was done and the children asleep, I would walk down to the Dearborn myself, sit and listen to the song of the water flowing over rocks, and stare up at Steamboat Mountain and beyond into the Scapegoat.

I remembered Dad's words. I could almost hear his voice, "They aren't making any more of that." No more open land. No more land for wild creatures like grizzly bears and Canada lynx and wolverine to roam, mostly alone. I tried to understand how something so simple, so untouched, could feel so powerful. I could not find words to express it.

When a fire broke out in the Lewis and Clark Forest nearby, we stayed even longer to help the ranch fulfill their bid to house and feed the fire crew. Evenings after dinner, we found ourselves in the company of some the finest people I had ever met. Against the backdrop of wilderness, we were soothed and comforted by people and

relationships. By the time the fire was out and the ranch put back in order, we stayed on longer to help with a building project.

We ended up spending much of that summer on the ranch at the edge of the Scapegoat. I had ventured into the wilderness on a horseback ride, just far enough to stand on a low peak. Just far enough to feel its vastness and power envelope me, yet overwhelmed by contentment and joy. I began to understand something John Muir wrote about wild lands being a great cathedral, consecrated by God. I did not stay; in fact, I have never been back. I don't really know why. Somehow, that experience was enough.

At home, I knew the wilderness was just over the tops of the peaks of the Bitterroot Range, but I never gave it much thought. I was grounded in the valley, incredibly busy with the children, homeschooling, the garden, social activities. I took the wilderness for granted. The cleansing of the air by millions of acres of trees. The headwaters of the streams we fished. The place where animals roam free and wild. So many of the things that made me want to raise my children in Montana originated in the wilderness. After that summer near the Scapegoat, I made a vow to never again take the wilderness for granted.

For some, the wilderness is a place of escape and restoration of their souls. For me, it is enough to look up the steep canyons of the Bitterroots, to look into the wilderness. I feel the wildness, the purity, and the power of wilderness each time a breeze blows out of those forests to caress my face.

Today, the Bitterroot Mountains and the wilderness beyond still serve as the backdrop of my life. We moved from the valley and live in the foothills. Our garden is

much smaller with only the two of us in the house now. We spend much of our free time hiking up Blodgett Creek, sometimes fishing, sometimes peering into the wilderness. The land still provides. There is much for which to be grateful.

Our subsistence experiment has come full circle, at times in tectonic-scale shifts, but most often on a more subtle scale. I more fully grasp the interconnectedness of all life on the crust of the ever-changing Earth, lessons learned in the garden, in the valley, and in the woods. I still have much to learn. That fact brings me joy. With less on my to-do list these days, I spend more time listening to the sounds of the forest that surround me. I spend more time seeing and less time recording. I breathe deep and smell the forest. I place my hand in Blodgett Creek and let the clear, cold water wash suspended particles of wilderness over me.

I look west and remember what Dad said, “They aren’t making any more wilderness. They aren’t making any more land.”

coda

To understand one thing completely
is to understand everything else.
Ellen Meloy

As Buddha said, “There are only two mistakes one can make along the road to truth; not going all the way, and not starting.” I have not arrived; I never will. It is impossible to know *all* the facts and to live out of a place of perfect knowledge, because the only thing that is ever certain is that everything is constantly changing. Not only that, but as John Muir said, “When we try to pick out anything by itself, we find it hitched to everything else in the Universe.” But I have begun the journey, and I don’t plan on leaving the path of life anytime soon.

When I began putting each of these essays together, writing to find out what my fingers know, as Jane Pauley says, I had a different idea of the project’s purpose. I thought that “older” readers in a general audience might find these essays as an

inspiration to begin their own journey, whatever that may be, wherever they find themselves. In this regard, perhaps I have succeeded. For "younger" readers, I felt that through historical accounts, both personal and societal, these works might inspire hope, that they would realize all of life is a journey that we take both with those that came before, those that tag along, and those who come after. In this, I do not believe I have succeeded, mainly because I no longer believe younger readers necessarily lack that understanding.

For the past six years, I have met many young people who already know this. Maybe they don't know a specific history. Maybe they are disillusioned at times by the process. Maybe they get disheartened by the distance we have yet to go. But I am happy to say that most individuals I have met on this journey have in some way inspired me, given me reason to hope, offered an unfinished map of the road ahead and offered to travel it together. Each of these individuals has extended a hand into the future, where the elements we need for progress may, at times, wain. We will be leaning on each other when our ability to move fails us, when our energy reaches critical lows, when we become disconnected from each other or our purpose, or when the changes needed seem too overwhelming.

Perhaps the greatest benefit this project has provided is an expansion of my vision, a grounding to my home place, and a greater understanding of how my life fits into the larger community of the Pacific Northwest. I now more fully understand where we have been in this region and can better map how I want to fit into the course of the region's future. I am joined by the bonds of respect and friendship to a larger, smarter, more engaged citizenry than ever before. I am grateful and filled with hope.

I don't know if Ellen Meloy was correct to say that "to understand one thing completely is to understand everything else." At least, it's a place to begin, to focus.

Air. Fire. Water. Earth. To these elements, I would add friends. These make the journey worth taking.

SELECTED REFERENCES

Ackerman, L. A. (2003). *A Necessary Balance: Gender and Power Among Indians of the Columbia Plateau.* Norman: University of Oklahoma Press.

Alt, D. (2001). *Glacial Lake Missoula and Its Humongous Floods.* Missoula: Mountain Press Publishing Co.

Alt, D., & Hyndman, D. (1986). *Roadside Geology of Montana.* Missoula: Mountain Press Publishing.

Arno, S. F. (1976, December). The Historical Role of Fire on The Bitterroot National Forest. Ogden, Utah: Intermountain Forest and Range Experiment Station, USFS, USDA.

Bigart, R. (2010, Spring). Charlot Loves His People: The Defeat of the Bitterroot Salish Aspirations for an Independent Bitterroot Valley Community. *Montana: The Magazine of Western History*, pp. 24-44; 92-94.

Bigart, R. e. (2001). *I Will Be Meat for My Salish - The Montana Writers Project and the Buffalo of the Flathead Indian Reservation.* Helena: Montana Historical Society Press.

Bigart, R. J. (2010). *Getting Good Crops: Economic and Diplomatic Survival Strategies of the Montana Bitterroot Salish Indians, 1870-1891.* Norman: University of Oklanhoma Press.

Bitter Root Salish History. (2015, September 15). Retrieved from Historic St. Mary's Mission and Museum: http://www.saintmarysmission.org/BitterrootSalishHistory.html

Boone, L. (2005). *Development of the Columbia River and Impacts on Native American Cultures and the Environment.* Retrieved from Roll on Columbia: Woody Guthrie & the Bonneville Power Administration: https://library.uoregon.edu/ec/wguthrie/development.html

Bowden, C. (1977). *Killing the Hidden Waters.* Austin: University of Texas Press.

Brooks, P. (1972). *Rachel Carson: The Writer at Work.* San Francisco: Sierra Club Books.

Butler, V. L., & O'Connor, J. E. (2004). 9000 years of salmon fishing on the Columbia River, North America. *Quaternary Research, 62*(1), 1-8. Retrieved from http://www.sciencedirect.com/science/article/pii/S0033589404000420

Cain, A. (2006). *Pounding Fish, Wishham, 1910.* Retrieved from The Oregon History Project: http://www.ohs.org/education/oregonhistory/historical_records/dspDocument.cfm?doc_ID=F3523F9E-C773-9C14-BE9501ECB16D822A

Carson, R. (1962). *Silent Spring.* Boston: Houghton Mifflin Harcourt.

Childs, C. (2000). *The Secret Knowledge of Water.* New York: Back Bay Books.

Childs, C. (2012). *Apocalyptic Planet:Field Guid to the Everending Earth.* New York: Pantheon Books.

Columbia River Inter-Tribal Fish Commission (CRITFC). (n.d.). *Celilo Falls.* Retrieved from Columbia River Inter-Tribal Fish Commission: http://www.critfc.org/salmon-culture/tribal-salmon-culture/celilo-falls/

Columbia River Inter-Tribal Fish Commission (CRITFC). (n.d.). *Columbia River Salmon.* Retrieved March 28, 2015, from Columbia River Inter-Tribal Fish Commission: http://www.critfc.org/salmon-culture/columbia-river-salmon/

Columbia River Inter-Tribal Fish Commission (CRITFC). (n.d.). *First Salmon Feast.* Retrieved March 28, 2015, from Columbia River Inter-Tribal Fish Commission: www.critfc.org/salmon-culture/tribal-salmon-culture/first-salmon-feast/

Columbia River Inter-Tribal Fish Commission (CRITFC). (n.d.). *Fishing Techniques.* Retrieved March 28, 2015, from Columbia River Inter-Tribal Fish Commission: http://www.critfc.org/salmon-culture/tribal-salmon-culture/fishing-techniques/

Columbia River Inter-Tribal Fish Commission (CRITFC). (n.d.). *Member Tribes Overview.* Retrieved March 28, 2015, from Columbia River Inter-Tribal Fish Commission: http://www.critfc.org/member_tribes_overview/

Columbia River Inter-Tribal Fish Commission (CRITFC). (n.d.). *Salmon Culture.* Retrieved March 28, 2015, from Columbia River Inter-Tribal Fish Commission: http://www.critfc.org/salmon-culture/tribal-salmon-culture/

Columbia River Inter-Tribal Fish Commission (CRITFC). (n.d.). *We are all Salmon People.* Retrieved March 28, 2015, from Columbia River Inter-Tribal Fish Commission: http://www.critfc.org/salmon-culture/we-are-all-salmon-people/

Department of Energy, U.S. Government. (2016). *Hanford Site*. Retrieved from Hanford Site: http://www.hanford.gov/

Egan, T. (2009). *The Big Burn: Teddy Roosedvelt and the Fire that Saved America.* Boston: Houghton Mifflin Harcourt.

Flores, D. (1996). Environmental History: An Art of People and Place. *Organization of American Historians Magazine of History*, 3-4.

Hanford Superfund Site History. (2016, April 21). Retrieved from Region 10: the Pacific Northwest: https://yosemite.epa.gov/R10/CLEANUP.NSF/0903AE66D99736E188256F04006C2D3A/045F8399CAA1B6BD882573FC0069B078?OpenDocument

Hanh, T. N. (2013). *Peace of Mind - Becoming Fully Present.* Berkeley: Parralax Press.

Harmon, A. e. (2008). *The Power of Promises: Rethinking Indian Treaties in the Pacific Northwest.* Seattle: University of Washington Press.

Harshak, S. (2009). *Essentials of Geology.* New York: W.W. Norton and Company.

History Matters. (1912). *"Dam Hetch Hetchy!": John Muir Contests the Hetch Hetchy Dam*. Retrieved September 14, 2013, from http://historymatters.gmu.edu/d/5720

History Matters. (1912). *Giving a Dam: Congress Debates Hetch Hetchy*. Retrieved September 20, 2013, from http://historymatters.gmu.edu/d/5721/

Kemmis, D. (1990). *Community and the Politics of Place.* Norman: University of Oklahoma Press.

Klein, N. (2015). *This Changes Everything: Capitalism vs. The Climate.* New York: Simon and Schuster.

Kolbert, E. (2015). *The Sixth Extinction: An Unnatural History.* New York: Henry Holt and Co.

Lama, D. T. (2005). *The Universe in a Single Atom - The Convergence of Science and Spirituality.* New York: Morgan Road Books.

Leopold, A. (1949). *A Sand County Almanac and Sketches Here and There.* New York: Oxford University Press.

Lytle, M. H. (2007). *The Gentle Subversive: Rachel Carson and the Rise of the Environmental Movement.* New York: Oxford University Press.

Meloy, E. (2002). *The Anthropology of Turquoise.* New York: First Vintage Books.

Montana Office of Public Instruction and Montana Fish, Wildlife, and Parks. (2010, January). *Council Grove: Site of the Hellgate Treaty of 1855.* Retrieved from Indian Education for All - Units related to Montana State Parks - Council Groves State Park: http://www.opi.mt.gov/pdf/indianed/resources/fwp/CouncilGrove.pdf

Montana Office of Public Instruction and Montana Fish. Wildlife, and Parks. (2010, January). *Council Grove: Site of the Hellgate Treaty of 1855.* Retrieved from Indian Education for All Units related to Montana State Parks - Council Grove State Park: http://www.opi.mt.gov/pdf/indianed/resources/fwp/CouncilGrove.pdf

Muir, J. (1901). The American Forests. In J. Muir, *Our National Parks* (pp. 331-37). Boston: Houghton Mifflin.

Muir, J. (1908, January). *The Hetch Hetchy Valley.* Retrieved September 3, 2013, from Sierra Club.org: http://www.sierraclub.org/ca/hetchhetchy/hetch_hetchy_muir_scb_1908.html

Olson, R. (2009). *Don't Be Such a Scientist - Talking Substance in an Age of Style.* Washington D.C.: Island Press.

Olson, R. (2015). *Houston, We Have a Narrative - Why Science Needs a Story.* Chicago: University of Chicago Press.

Orr, D. (2010). *Hope is an Imperative: The Essential David Orr.* Washington D.C.: Island Press.

Pauley, J. (2005). *Skywriting: A Life Out of the Blue.* New York: Ballantine Books.

Pinchot, G. (1907, June 14). *The Use of the National Forests.* Retrieved from Forest History Society: http://www.foresthistory.org/ASPNET/Publications/Use_of_Natl_For/

Pinchot, G. (1910). Principles of Conservation. *The Fight for Conservation*. New York: Doubleday, Page & Col.

Popham, C. (1997). *Early Days in Sagebrush Country.* Missoula: Pictorial Histories Publishing Co., Inc.

Portland State University and Oregon Historical Society. (2015). *Celilo Falls - Images.* Retrieved from Celilo Falls: http://www.oregonencyclopedia.org/articles/celilo_falls/#.VVN1uflViko

Portland State University and the Oregon Historical Society. (2015). *Celilo Falls.* Retrieved from The Oregon Encyclopedia: http://www.oregonencyclopedia.org/articles/celilo_falls/#.VVN1uflViko

Raymond, H. L. (1988). Effects of Hydroelectric Development and Fisheries Enhancement of Spring and Summer Chinook Salmon and Steelhead in the Columbia River Basin. *North American Journal of Fisheries Management*, 1-24. doi:10.1577/1548-8675(1988)008<0001:EOHDAF>2.3.CO;2

Restore Hetch Hetchy. (n.d.). *About Restore Hetch Hetchy*. Retrieved September 14, 2013, from http://www.hetchhetchy.org/about

Richter, B. (2014). *Chasing Water - A Guide for Moving from Scarcity to Sustainability.* Washington D.C.: Island Press.

SFPUC. (2013). *Clean Hydroelectric Energy.* Retrieved September 14, 2013, from San Francisco Water Power Sewer: http://www.sfwater.org/index.aspx?page=207

SFPUC. (2013). *Hetch Hetchy Reservoir.* Retrieved September 18, 2013, from Hetch Hetchy Water and Power System: http://www.sfwater.org/index.aspx?page=554

Souder, W. (2012). *On a Farther Shore: The Life and Legacy of Rachel Carson.* New York: Random House.

Stanford Encyclopedia of Philosophy. (2009, March 27). *The History of Utilitarianism*. Retrieved September 5, 2013, from http://plato.stanford.edu/entries/utilitarianism-history/

State of California. (2006). *Hetch Hetchy Restoration Study.* Retrieved September 15, 2013, from Hetch Hetchy Restoration Study Report: http://www.water.ca.gov/pubs/environment/hetch_hetchy_restoration_study/hetch_hetchy_restoration_study_report.pdf

Stegner, W. (1954). *Beyond the Hundredth Meridian - John Wesley Powell, The Exploration of the Grand Canyon and The Second Opening of the West.* Boston: Houghton Mifflin Company.

Steingraber, S. (2010). *Living Downstream: An Ecologist's Personal Investigation of Cancer and the Environment.* Boston: De Capo Press.

Stone-Manning, T., & Miller, E. e. (2002). *The River We Carry With Us - Two Centuries of writing from the Clark Fork Basin.* Livingston: Clark City Press.

Sugihara, N. G., Van Wagtendonk, J. W., & Fites-Kaufman, J. (2006). Fire as an Ecological Process. In N. G. Sugihara, J. W. Van Wagtendonk, K. E. Shaffer, J. Fites-Kaufman, & A. E. Thode, *Fire in California's Ecosystems* (pp. 58-74). Oakland: University of California Press.

Sullivan, G. (2008). *Saving Homewaters - The Story of Montana's Streams and Rivers.* Woodstock: The Countryman Press.

Tansill, C. C. (Ed.). (2008). *Northwest Ordinance; July 13, 1787*. Retrieved May 9, 2015, from The Avalon Project (Yale Law School): avalon.law.yale.edu/18th_century/nworder.asp

The Forest History Society. (2013, July 25). *Gifford Pinchot (1865-1946)*. Retrieved September 12, 2013, from http://www.foresthistory.org/ASPNET/people/Pinchot/Pinchot.aspx

U.S. Environmental Protection Agency. (2016, April 21). *Hanford - Washington*. Retrieved from Region 10: the Pacific Northwest: https://yosemite.epa.gov/r10/cleanup.nsf/sites/Hanford

U.S. Forest Service. (n.d.). *Fire as a Tool: Native Americans Use of Fire.* Retrieved from Living with Fire: Making Wise Choice: http://www.na.fs.fed.us/fire_poster/nativeamer.htm

Udall, S. (1988). *The Quiet Crisis and The Next Generation.* Salt Lake City: Peregrine Smith Books.

Ulrich, R. (1999). *Empty Nets: Indians, Dams, and the Columbia River.* Corvallis: Oregon State University Press.

Worster, D. (1985). *Rivers of Empire - Water, Aridity, and The Growth of The American West.* New York: Pantheon Books.

Worster, D. (2001). *A River Running West - The Life of John Wesley Powell.* New York: Oxford University Press.