Field Notes from the Digital Forest

In the spring of 2019, I was awarded a writing residency at the H.J. Andrews Experimental Forest in the Central Cascades of Oregon, just fifty miles from my home. H.J. Andrews is a 16,000-acre ecological research forest that comprises one percent of the surrounding Willamette National Forest—one of the most heavily logged forests in the world. It is a place where clear cut parcels sit next to stands of old growth. The residency, awarded by the Spring Creek Project, is part of the National Science Foundation's Long-Term Ecological Reflections Project. It is an effort to collect work from writers, artists, theologians, and philosophers of their impressions from five reflection plots throughout the forest.

The following are portions of my field notes from my stay at the Andrews, as recorded in real time.

April 29, 2019, Day One

The drive to Andrews from my home is short and familiar, on a winding highway along the McKenzie River. I drive slowly, passing farms and the diversion channel in Leaburg where the river is controlled; the tiny Heaven's Gate cabins that cling to the edge of the river's banks, asking to be swallowed by the next flood stage; and a clutch of popular riverside wedding lodges where I can count on both hands the friends I've known that married there, ticking off the unions that have since dissolved. Finally, I veer left just past the Christmas Treasures house, a local landmark where dozens of bearded Old Man Winters hold court.

It is a road I do not remember having taken before, though surely I must have. I have several memories of the Andrews, the first of which from some twenty years ago on a

geomorphology class trip in the heat of summer to see the avalanche chute, a concrete plume that rises hundreds of feet up a steep slope and down which even today geologists chuck myriad types of debris to see what happens. In truth, the chute is a relic from a different time, rudimentary in conception and almost obscene in the way it cuts through the forest. It is also utterly unique in the world and unlikely to be duplicated—one would be hard-pressed to gain approval of such an invasive and industrial, albeit good fun, research project now. It was my memories of this strange, incongruous feature in the forest that drew me to apply to the residency.

On my way I stop at Blue River Reservoir, a popular summer recreation spot that is the gateway to the Andrews. I have it all to myself save a freshwater newt playing across the pebbles in the shallow shoreline water. The water is deep blue and glassy still, no bugs or fish disrupting its surface. The tree-covered mountains rise up sharply behind it and the world is still. It smells like home.

I arrive, check in, and go the “Green House”, the only modern, non-forest service brown or seventies construction- style building at the headquarters. It has concrete floors, wood-slab furniture and is clean and built to impress with large windows that look out to a graveled maintenance yard and repair shop and several other residences. Through them one might squint and think themselves in town.

In the afternoon I walk. The Andrews is a working forest and it shows. Besides the main building and residences there are the maintenance buildings, the monolithic avalanche chute, vehicle wash stations, picnic areas, and roads upon roads. In the forest there are stakes with thermometers, flagged trees, pipes and buckets, and everywhere freshly cut logs- a visible effort to clear roads and trails of the hundreds upon hundreds of trees that fell in a recent historic snow

storm. They lay now in piles, already dry and seemingly waiting for a stray spark to begin their conflagration. I wonder if this is the last spring before it burns. Eventually, I pass the educational trail with its numbered markers. I was told that each child is given an iPad so they can watch an interpretive video at each location. I imagine rain-soaked groups of school children staring into screens at a virtual ranger. At each marker I stop and look, searching for the point of interest, but without an iPad I am at a loss. It could be anything, the fallen log, dog-tagged as part of some research project, the nurse log covered with a carpet of thick, fern-like moss, the ancient cedar tree towering above it all.

Back at the Green House, my every movement echoes against the concrete space. Outside military planes fly low overhead and there is a constant roar of chainsaws.

April 30, 2019, Day Two

I rise long before the sun, filling the darkest morning hours with coffee and a book. A trio of green stones collected from the creek rest on the amber wood-slab table in front of me, begging observation. They are variegated, composed of angular fragments of parent rock broken and transported by landslides having sat through millennia of compaction, cementation, and erosion before being rolled, over and over, until they were smoothed and waiting for me at the edge of the water. I consider the value of practicing stillness like a stone.

Mid-morning, Fred Swanson, a long-time research manager of the forest and eco-geologist arrives to orient me. I am pleased to meet this long-time steward of the Andrews whose reputation as a researcher and protector of northwest forests precedes him. He's a kind-eyed, lanky man who claims to be well into retirement but still sprints through the forest following what are only trails to his accustomed eyes. He is passionate about the Andrews and keen to talk

about the research, which is abundant. With him as a guide, I notice for the first time the true extent of the research infrastructure in the forest. There are trees with wires and buckets running their length measuring temperature and humidity at ten-foot intervals into the canopy. Other trees wear belts, which measure their expansion due to heat, moisture, and growth. In some plots the infrastructure is composed primarily of white plastic (pipes, buckets, funnels) and when combined with lines for water, data, and power gives the scene a distinctly medical quality. I think this just as he points out a clunky thermometer mounting with a tiered apparatus attached to the front that says: “This is a respirator. It keeps the air around the thermometer moving so local variations in sunlight, for example, don’t influence the data.” Medical indeed.

Two hours and several miles in, Swanson is still talking about research. There are scientists of every ilk: the “owl people” who work at night, the “lichen people” who climb the trees to collect their samples. It goes on and on. For every kind of scientist, there is a research area. The Andrews is divided into three general types of areas: control plots, old growth stands, and designated watersheds, all with studies being conducted in them. Geology dominates the research, which suits me fine. The substrate is volcanoclastic at lower elevations with dense lava flows and welded tuffs capping that at higher elevations. The pyroclastic deposits, with their loose ash and pumice are prone to failure so there’s a lot of geomorphology studies. The US Geological Survey maintains the avalanche chute at headquarters and a series of stream gauges along Lookout Creek, a tributary of the Blue River, which itself flows into the McKenzie. In cooler eras, alpine glaciers helped form the crowded cluster of steep-walled valleys that make up the forest and their morainal debris had previously dammed the Blue River, which is now held in check by Corps of Engineers dams.

By the time we get to the scientists measuring soil creep across plots less than sixty feet square and the progression of a single tree being slowly split over years, one half on either side of a shifting slump block, the minutia of it all starts to overwhelm me despite my geologic background. I flash back to my own days as a researcher, entrenched in the singular-focus world of Newtonian investigation in which everything is parceled and compartmentalized. As I did then, I feel a frustration with the willful blindness of continuing these narrowly focused long-term projects, most of which were initiated when climate was considered reasonably constant. What is the point of all this long-term research in the age of rapid climate change? Steady-state, predictable systems no longer exist. That is, if the whole thing doesn't burn this summer. The question of fire sits unspoken on my lips all day.

At the old growth reflection plot, I ask Swanson if outgoing research infrastructure is monitored as closely as incoming. Earlier in the day he had shown me a map of the research coded to indicate the purpose, location, and extent of each project to make sure that incoming investigators didn't disrupt existing plots. My question is about removal, especially after passing several sites of abandoned buckets and other remnants from clearly terminated projects. Abashedly, Swanson confirms that no, no one tracks the removal. Questions fill my mind at this. Is it like the Grand Canyon where debris left by researchers is 'historical' by definition and must be left in place? Will future researchers arrive to study what these well-intentioned investigators leave behind? What could be learned from their buckets, wires, and netting decades from now? Will scientists use them to estimate rates of change, soil creep, or decomposition as they use trees now? Will they be buried under the weight of the forests' own debris or carried away by chipmunks or smashed by falling trees and deposited as fragments in the streams to be rounded like stones?

Then, in spite of the daylight, two owls hoot, emitting low, guttural barks between the trees. A mated pair calling out to one another, “Who cooks for you?”. I never get a chance to ask. We return to the Green House in mid-afternoon. As I sit and write this an oil tanker truck rolls past me for the second time today, refueling the forest. Earlier in the day I stood aside with Swanson as a UPS truck made its way past us down the road.

May 1, 2019, Day Three

I start thinking about money. In the headquarters building, I ask the current lead of the site what he estimates the gross economy of the Andrews forest to be. Between research, managed logging, the Corps of Engineers, USGS, National Weather Service, Fish and Wildlife Services and education and recreation, it’s obvious that the Andrews is a forest with its own economy that surely is in the millions of dollars annually. The researchers clearly consider the Andrews a revenue source, the government, a sink. I am curious how this one percent of land compares to the larger Willamette National Forest in monetary terms and how that might play into future funding and protections. But no such accounting exists.

Then I ask if him he thinks this is a wild place. He struggles with the question, citing road density in particular as evidence of the touch of man on the land. But then, he says, “It’s filled with wild things.” The question hangs between us, unresolved.

May 2, 2019, Day Four

In the morning, I venture out deep into the forest on my own, eschewing the radio and check-in board, thinking I am heading to an easy hike since from the map it appears to run level along the side of a spur. But elevation is deceptive in the Andrews. It takes me a full hour to

cover slightly less than two miles on a narrow and poorly defined trail that is still strewn with winter debris. It is an old growth forest like few I have ever seen. Thick stands of ancient Douglas Fir and Western Red Cedar are surrounded by blankets of moss inches thick. I scramble, stymied by a massive log laying across the trail and continue on, huffing up switch-backless micro-slopes, gaining and losing the same one hundred feet of elevation over and over again. Twice I am lured by side trails that lead to research stations and am forced to double back, searching for the trail. Along the way I notice a tiny white flag, a marker for some kind of research, and I can't help feeling that forest is signaling surrender, aware of its tenuous relationship with these humans, the fragile network of policy and funding that keeps it from the chainsaws. Finally, I am stopped entirely by a tangle of fallen limbs too thick for me to pass. I retrace my steps back to my car.

I continue driving up the steep, rocky road to the other end of the trail. The road is narrow enough that even my tiny car has to thread between the cliff side and the giant potholes that pock it. I stay in first gear, collecting dust, eager to arrive intact, which I do. Back on the trail it's clear from the outset that few people make it this far into these woods. The path is faint. An eighth of a mile in, it's also snow-covered. I step through the first two patches using the prints of a larger foot, likely a ranger. But ahead I see a longer stretch of white and deep holes where my guide has fallen through to his calves. For the second time, I turn around.

May 3, 2019, Day Five

The map is poorly labeled. Today I lose half an hour to confusion, walking mislabeled roads, roaming uphill and back again in search of entry to the forest. Everywhere trees lay piled like kindling from the storm, blocking my way. I climb over and scramble under them for an

hour, only to finally be turned away by a trail so steep and perilous I doubt it should be hiked by anyone in solitude.

Defeated and walking back to headquarters I realize why this patch, this one percent, was gifted to the ecologists and researchers, why these ancient trees and these alone were offered up for protection at the height of Oregon's logging: the forest will not release them. The steep, impenetrable terrain paired with the soft, ever-failing volcanics make logging, with its heavy equipment, laughable. I see now that it is not the benevolence of humans that preserved this forest, but the land itself. Our perceived roles as triumphant stewards and conservers of this forest is a construct, a fallacy. This is not a bastion but a reservation.

But then today, from my cabin with the windows open, the sound of children laughing is brought to me on the breeze. Their voices chuckle and roll like the stream over the rocks. They are girls, at play in nature, insulated for a time from the pressures and perils of modern girlhood by the canopy of these ancient trees.

I follow the lilt of their laughter into the woods. They are middle grade, and I am startled by the freshness of their bodies, the softness of their skin visible from even a distance. I close my eyes and for a moment see myself as a young woman in these woods, standing, much as they are now, circled around a group leader, smiling in the sun. I am told they are here as a coming of age experience, a rite of passage. They are all wearing helmets. I wonder how my early impressions of the woods might have been different if I was doomed to experience it in this aseptic and risk averse way? Will they carry this practice into adulthood, the sound of the forest forever muffled by padding? After some introduction they are each given a location along the interpretive trail and asked to make their way on their own. Then, they sit. Or stand. Alone with their thoughts for a time in the woods.

Back in the Green House I picture these girls in their forest plots, and see them as the vine maple, appearing to always be lucky, catching what little light penetrates to the forest floor in their uplifted palms. Youth, it seems, is always gifted grace. In truth, it runs the other way, the most successful maples have rooted themselves within grasp of daily light and it has taken them years to grow into that space. The forest shines bright with their golden green because they have chosen it to be so. The girls, I know, must also choose to grow into the light.

Shortly, I hear the sound of their return down the dusty road. I am startled. In this era, an hour, apparently, or even less, is sufficient to affect one's passage into adulthood.

May 4, 2019, Day Six

I have been living here daylight to daylight, waking just before sunrise and collapsing into sleep before true darkness. But today I rise at three a.m. to watch the stars, the first of six short hikes I will take today, one approximately every two hours, set on a time-based experience of the Andrews. When I step outside in the darkest hour before dawn I spin, reeling backwards as the field of stars expands my vision. We are passing through the tail of Halley's Comet and the normally crowded sky is promised to be filled with meteors.

I see more satellites than shooting stars. Human endeavor intruding on the natural world. I feel like I've been brought here not to observe nature but to observe man's touch on nature, the ways in which we are slowly seeping into even her most prohibitively guarded places.

At first light I set out again, returning to the road that began my time here. I search and crawl through understory until I find the way to the trail that runs along Lookout Creek, and beyond a tangle of slim, fallen firs I see an aged and weathered sign warning me the bridge is

closed three miles ahead. Pressing on, the trail disappears beneath the tinder around the second bend. Again, the Andrews turns me back.

Two hours later I emerge again, this time heading out through Headquarters and up a steeply inclined gated road that runs high above camp. It is always uphill in all directions in the Andrews. The chipmunks and I share the walk with a bejeweled bug I have never seen before. It paces me, slowly moving up the steep gravel path, a rectangular fluttering of red. I have had the solitude of early rising for five hours now. The sun has slid to the base of the trees across the road, but has not yet touched ground. The woodpeckers and crows have begun their racket, drowning out the lyrical songbirds of earliest morning.

It is chainsaw day. By mid-morning engines fill the forest and cars and trucks start racing up the roads with none of the caution of the work days. These are graduate students, I am sure, driving in from Eugene and Corvallis, slaves to the university during the week, destined to be short of time and energy by the weekend. I hear them call to each other through the trees, unaware of having company, enjoying filling the endless space around them with their voices.

Hours pass and the still chainsaws roar. They are a constant buzzing punctuated with deep, guttural roars as some piece of equipment or other devours a log. It is necessary work, I know, and I am glad for it, after so many days of being turned back by fallen trees, the risk of fire so clear upon the ground. What will come of this place, so dependent on long term measurements and reflections, if it is all to burn away?

That, too, is a data point, I suppose.

By the afternoon I am on my fifth hike of the day and the air is hot and smells like dirt. The river is cacophonous, somehow louder than in morning, the few remaining birds barely audible above its din. Midday is pensive, not like the opening of morning where everything

seems in motion. Instead, everything seems to hold its breath in the heat of day, the plants are busily eating up the sun but everything else shies away. The chipper still roars, like a dying animal, choking on its kill. The machinery blocks the road; I couldn't leave if I wanted to.

In late afternoon my final walk provides relief. The machines are gone. Cool air slides down the valley walls. The birds are still and silent. A stick in the road transfigures before me into snake, sliding away in front of me just beyond my steps. The sun slants through the trees, reaching now to the forest floor. The world glows the soft green of moss and new growth. The river calms allowing for the voice of a gurgling stream to be heard above its din. Everything dances in the breeze.

May 5, 2019, Day Seven

The dogwoods have come into full bloom, their white flowers like kisses on the pages of a letter. Today I take more pause, looking at the old growth trees as a community, rather than individuals. I observe how they sit amongst each other, set at a deliberate distance, together, but apart. I wonder what it's like to stand next to another living thing for so long. How many generations of vine maple and squirrels has this community, this stand of trees, witnessed playing at their feet? What were they like in their adolescence? Did they let the wind take their boughs more freely? Did they dance roughly and mingle more with those around them before gaining their current stature?

The Andrews does not give up her secrets sweetly. I take the gated road again, determined to not be turned back. It is a climb, seemingly forever, uphill into mountains. There are trees and debris all along the road, which has a near-vertical slope to the side of it. I move

slowly upwards, climbing over and under piles of debris and logs. I know that my exploration here will be penultimate. I will be allowed no summits or completions, but I press on.

Until at last, a view to the distance, a panorama of the entirety of the Andrews. It is the first since my arrival. I stand for several minutes at the edge of the road, my arms outstretched to the world, restoring my soul, finally feeling transformed by this place.

But then from the corner of my eye, a camera. Its gaze fixed directly over the place in which I stand. My arms drop to my sides. I know that cameras are ubiquitous in the Andrews, mounted on fence lines, buildings, equipment stands and even the trees themselves. I want to not care. But still I am surprised. I take a picture of it taking pictures of me. I wonder how much of my time here has been recorded and what we are recording it all for. Surely, if a tree falls in this forest, someone hears it. Why can we not bring ourselves to trust that the sediment, rocks, tree rings and erosion are recording its history for us? If only we would learn to listen. I try to turn my gaze back to the forest, wanting to continue being in the world in such a naked and open way. But the camera's presence makes me lose the glory of the place, eventually urging me down the hill.

May 6, 2019, Day Eight

In eight days, I have passed no one in the wild. Nor have I encountered another human more than a few feet from either a vehicle or a building. The row of vehicles outside the living quarters and parked in the Headquarters' lot suggests there are at least a dozen people in residence, more than twice that are on site during working hours. But in off hours, I see no open windows, no one sits on porches or at the picnic tables. Lawn chairs are covered in pine cones and debris suggesting it has been some time since their use. There is no gathering of souls, no signs of human life save construction, infrastructure. I try to imagine the scene as people lived

even twenty years ago, lounging outside with a book, playing guitar or volleyball in the now abandoned court. Instead, I see it as studies tell us most Americans live, inside hunched over their phones playing Fortnite, streaming YouTube beauty videos, shopping on Amazon, refilling their prescriptions online, eating microwaved food.

And these are the ones that want to be outside.

Yesterday I felt a sadness about the brevity of my time here. Today, I feel an urge to leave. The Andrews for me has become a microcosm. It is a place where humanity presses itself into and against nature, where people work but do not revel, science and engineering reign supreme and ancient trees are drenched in wires; a digital forest. My time here, I know, is meant to be a part of this machine. I have been asked to reflect on a carefully curated part of the forest. None of the long-term reflection plots are in the clear cuts.

I pack up and drive down the road throwing a cloud of dust into the air behind me, sure of only one thing from my time here.

The Andrews is being studied but we have not learned what it has to teach us.