

Christopher Norment
Department of Environmental Science and Biology
College at Brockport, SUNY
Brockport, NY 14420
585-395-5748
cnorment@brockport.edu
January 2012

On Coming Out of the Desert, and Into the Rain

In November of 2010 I spent a rainy week at the Andrews Experimental Forest. I arrived in Blue River after a long drive north from the Mojave Desert, where I'd devoted most of my sabbatical leave to a project on the conservation and evolution of rare species in the Death Valley region. I imagine that my motives for exploring the Andrews were different than for most of those who participate in the Visiting Scholar or Spring Creek Writer's Residency programs, for I was primarily interested in thinking about something that the Andrews was not – desert. One of the species that I had spent a lot of time with was the Inyo Mountains slender salamander, *Batrachoseps campi*, which is one of only two desert salamanders in the world. In order to better appreciate the Inyo Mountains slender salamander's ability to persist in an environment that receives less than eight inches of precipitation annually, I wanted to live for a little while in a place that is magnificently suited to salamanders. The Andrews, with its average annual precipitation of 88 inches, seemed like the perfect location in which to contemplate the contrasts between lush old growth coniferous forest and hardscrabble desert, in part because the Andrews also is home to one of the closest relatives of the Inyo Mountains slender salamander, the Oregon slender salamander, *Batrachoseps wrighti*. What follows is a short essay describing my thoughts and experiences as I searched the Andrews for salamanders during a cold and rainy week in early November. It is excerpted from a work in progress, *In the Fullness of Time*, a book (hopefully) of creative nonfiction focused on the conservation and evolution of rare species in the Death Valley region.

Weather report for the Andrews Experimental Forest, western slope of the Oregon Cascades, November 7th through 9th: mist, fog, drizzle, sprinkles, light showers, steady rain, intermittent downpours, wet snow at the higher elevations, temperatures in the 30s. The old-growth forest, mostly a mix of Douglas-fir, western redcedar, and western hemlock, stands shrouded in mist, wreathed in thick tendrils of gray fog, like a scene from a sixteenth-century Chinese landscape painting. The crowns of the trees, some more than 25 stories high, drift in and out of the clouds, and views up valley are restricted and intimate. Even when the skies are not spitting rain, the trees are - an almost constant shower drifting down from the foliage, which on

some of the largest trees doesn't begin until 150 feet off the ground. The streams fill with runoff and everywhere there is the sound of rushing water.

I gird myself in layers of polypropylene, finish with rubber boots, rain pants and jacket, then throw a waterproof cover over my pack and grab an umbrella. After a short drive I begin walking up the Lookout Creek trail through magnificent old growth forest, flipping rocks (a few), lifting slabs of bark (lots), rolling small sections of logs (many), and poking through moss-covered debris as I search for salamanders. At the start of my hike the rain is light but steady - typical late-autumn weather for the Andrews, which normally receives more precipitation in November (14 inches on average) than during any other month of the year. And after two months spent in the desert's heat and aridity I welcome the moist coolness, the fresh, conifer-laden scent that comes with each breath. I welcome, too, the moss-covered logs, the huge trees, the grayish-green garlands of lichen, the yellow drift of bigleaf maple leaves, the touch of rain on my face, the calls of the forest birds slipping through the dark, dripping understory - Brown Creepers, Varied Thrushes, Winter Wrens. The rain quickly builds as I walk, transitioning from "light but steady" to "continuous and heavy." Rivulets course down deadfall logs, spill off broken branches, track steep sections of the trail. The understory is a soaking carpet of Oregon grape, sword fern, mosses, and foam flower, the ground littered with twigs and bits of leafy lichen that have fallen with the rain. Fungal fruiting bodies are everywhere, pushing up through the thick duff, drawn into light by the third day of this storm. My breath steams, and my nose is another runnel. I love this soggy day, but I feel a bit like an awkward tourist; the ambience of this landscape offers such a vivid contrast to where I was working just a few days ago - Nevada's Ash Meadows National Wildlife Refuge, in the transition zone between the Mojave and Great Basin deserts. There, the skies rained light instead of water, early November temperatures pushed ninety instead of forty, and the views extended for fifty miles through glorious, unobstructed, arid space. Mosses and ferns were scarce and senescent refugees, hiding out in small, north-facing niches, a giant leather-leaf ash tree might hit all of thirty feet, and no self-respecting Winter Wren would ever grace Ash Meadow's mesquite thickets. If "variety is the spice of life," then my days at the Andrews are flavored with habanero peppers.

I have come to the Andrews Experimental Forest partly (and perhaps perversely) because I have been thinking about Inyo Mountains slender salamanders. A few weeks ago I had trudged up a heat-blasted alluvial fan at the base of the Inyo Mountains on an unusually hot September day, brilliant light pouring from the sky, the air soaked with heat, before working my sweaty way into a sweetly shaded canyon, to a patch of seep willow and a small waterfall - and at the base of the falls, beneath a flat rock, I had found a small, chocolate-brown salamander. Even though I'd heard that salamanders occurred in the canyon, and I'd found them elsewhere in the Inyos, there was something stunning and unexpected and achingly beautiful about their presence. It just did not make sense that an animal so sensitive to desiccation, to the very conditions that create a desert, could survive in such a place. Salamanders should live in a land of rain, where there are

damp mosses and ferns and thick chunks of rotting wood, where it is cool most of the year, and there is the shade of great trees, and the swirl and rush of mountain streams.

Lookout Creek drainage, McKenzie River Valley, western slope of the Oregon Cascades: this country *feels* as though it ought to make salamanders happy. It is a perfect place in which to study and contemplate old growth forests, of course, but by living here for a short while I also hope to more fully reflect upon what I witnessed in the desert. I desire contradiction and diversity. This morning, before I went walking in the rain, one Andrews staff member apologized for the weather and said she was sorry that I'd "hit a bad week." No worries. I yearn for dampness, fog, and rain, enough to nourish the eight salamander species known to occur here: rough-skinned newt, Dunn's salamander, ensatina, arboreal salamander, Cascade torrent salamander, Pacific giant salamander, long-toed salamander, and Oregon slender salamander, *Batrachoseps wrighti*, a close relative of the Inyo Mountains slender salamander. I'd like to see them all, but I am most interested in the Oregon slender salamander, and for what it might suggest, indirectly, about the haunting uniqueness of its sister species.

I cross Lookout Creek on a stout bridge, the stream flowing through a chaotic tumble of moss-covered logs, then follow the trail as it climbs through magnificent forest on the southern side of the drainage. The steady, insistent rain continues. I pull the umbrella out of my pack and add its extra protection, but slowly, inexorably, my old rain jacket begins to leak, and damp spreads across my shoulders and down my arms. I move slowly and pause often; wherever there's a good scatter of downed logs I set down my umbrella and rummage around, searching under anything small enough to move and pulling apart clumps of rotting wood. After two hours of fruitless hunting and trying to conjure up a search image from my imagination, my hands are numb and I am as frustrated as I was before I began finding salamanders in the Inyo Mountains. But then, below the massive bulk of a Douglas fir, I flip a small chunk of decaying wood and uncover my first Oregon slender salamander. It is small – about 1 and 1/2 inches from the tip of the snout to the vent - with a brick-red back and tiny, whitish-silver splotches along its sides. The salamander lies in a tight coil, as if protecting itself against the cold rain (or me) and when I pluck it from the forest floor it remains curled in my hand. I flip the tiny beast and see the characteristic black belly, with large white flecks, that distinguishes the species. Once again there is that small pulse of adrenalin, as there was when I found my first Inyo Mountains slender salamander. But after a few minutes of excitement I relax and feel, mostly, the simple pleasure of finding the creature that drew me to the Andrews. Here, on this rain-soaked day, as the temperature hovers in the high thirties, I am quietly content, and happy.

I can tell that the tiny salamander belongs to the genus *Batrachoseps* because it has only four toes on each hind foot, and small limbs. The scientific papers that I've read describe the skeletal and genetic characters that unite them more generally with other members of *Batrachoseps*, and most closely to the Inyo Mountains slender salamander and a third species, the Kern Plateau slender salamander. And yet the Oregon slender salamander's habitat seems so "salamandery," and differs so dramatically from that of the Inyo Mountains species, that I cannot

quite reconcile what the data indicate about their relationship with what my senses tell me about where they live. There is too much dissonance between the soggy, fecund expanse of old growth forest on the Andrews and the tiny slips of riparian habitat that thread through the high desert country of the Inyo Mountains. The expanse of the Oregon slender salamander's range, as compared to that of the Inyo Mountains species, is a telling illustration of this discord. One paper estimates that the occupied habitat in the Inyo Mountains totals no more than 50 acres, while much of the 15,000 acres of the Andrews could support Oregon slender salamanders – not to mention all of the other stands of mature, low-elevation conifer forest within the species' three-million-acre range. Salamanders – lots of them – should live in the rain-soaked old growth forests of western Oregon, but none should have the temerity to dwell in the California desert.

I hold the tightly coiled salamander in the palm of my hand, bring it close to my face, and contemplate the dark pupil of its eye, ringed with delicate flecks of gold. I wonder what it perceives of me from across the great gulf of the 340 million years or more that separate our lineages. For a few moments the larger world of the Andrews vanishes – the white noise clatter of Lookout Creek in the valley below, the fertile scent of the sodden forest, the Douglas-firs towering above, even my freezing hands and damp clothes. I try to conjure up another salamander in another place, the rich riparian smells of some tiny Inyo Mountains stream, sagebrush and rabbitbrush covering the sun-baked hillsides, the brilliant light, the guttural croaks of ravens overhead, the steep eastern scarp of the High Sierra in the distance. And I imagine the space that separates my spot in the Andrews from the Inyo Mountains – southeast for six hundred miles through the Oregon Cascades, past the Klamath Basin and Mount Shasta and into the High Sierra, and finally across the great trough of Owens Valley. All of that distance and all of that time, the histories of the species unspooling across the years and miles. Damn.

I return the salamander, gently, to its resting place beneath the chunk of wood where I found it. Rather than continuing my search I yield to the rain's persistence and retreat toward Lookout Creek.

After a few minutes of walking, the great forest comes alive to me, once again.