

## The Cinderella Diary

**December 1:** The GPS unit, the clipboard, the dog and I take a walk in the northwest corner of Joaquin Miller Park. We start on Skyline, near Manzanita Flat (where a lone Pallid Manzanita is barely hanging on) to walk eastward on the Castle Park trail. It's a fire-road, with gates at the roads. Big, wide, graded, created by cut-and-fill along the steep slope.

All the new hard surfaces at Chabot are supposedly adding big surges of rapid rain run-off to Cinderella Creek, and the Castle Park Trail lies between Chabot and Cinderella Creek. Maybe I'll find some evidence in one of the tributaries to Cinderella, or some cool plants, or figure out how the trails connect, tweak my trails-map-in-progress.

I find two eroded places, where small tributaries apparently cross Castle Park trail. No water running now. They're small, not very far apart, and it looks like the streams meet downslope a bit, not far from the trail. At the eroded strip, there's a bunch of Sneezeweed and Juncus on the uphill side a flat spot, still wet from last month's rains. I can't tell, from either side, whether there's a silted-in culvert under the trail.

A real surprise on the downhill side: big blotches of orange in a seep from beneath the trail. Not quite Cinderella-Pumpkin Orange, more like Just-Peeled Madrone orange, maybe 50 square feet of orange streambed. Iron oxide, right? Must be iron. But it's not like the blotches of orange I've seen in Fern Ravine; those were duller streaks of orange in the water. This is settled out or precipitated, depositing a thick coat of orange covering the area where the water seeps down the slope, and the sides and bottom of channel of the small rill. The water is very clear, but there's a sheen to the top of the water, though not a rainbow sheen like oil. This looks almost waxy.

There are two seeps of water, here, really. Facing the path, upstream, there's clear water seeping from underneath the trail, below the eroded spot. To the left about 10 feet, from behind a pile of logs, the orange seep runs down, covers the bottom of a shallow pool, then joins the other stream. The orange continues to line the bed of this combined stream. Orange as far as I can see downstream, which is not far, there's a lot of vegetation; there's Lady Ferns as tall as me! (So we know that it's not harmful to plant life!)

This spot is at the bottom of a steep dip in the trail, it looks like the source is buried under several feet of fill.

Those of you who have been to the sulphuric-acid mine site in the Leona watershed, and seen its creek bed: it's not quite like that. This is not quite the same shade of orange and the texture of the orange stuff looks different. But I was definitely reminded of that creek (pH 4.0 or even much lower, depending on water flow) so I keep my fingers out!

So what's going on here? Who would have a clue? Maybe the water-quality test team?

**December 7th:** It turns out that Mark Lane has the water-testing kit, since it's the first Saturday of the month. He and I meet at the little parking area in the Sequoia Arena area (by the bathrooms). We take the Castle Park trail westward, through an alley of acacia, hundreds of thumb-thick and pencil-thick sprouts and a few larger trees.

Mark uses the multi-meter to test the water in the orange stream. The pH about 6.7, a little lower than the measurements he gets at El Centro. But the conductivity, at 1186 (or was it 1168?), is about double the usual creek measurements. Conductivity is a measure of the ability of water to pass an electrical current, indicating the presence of ions in the water. Likely to be the orange stuff, could be other things. Hmmm.

It's kind of sticky, waxy or soapy, and there's a lot of clay. One of my shoes is going to be slightly orange the rest of its life, I think.

I guess we could have tested the clear stream of water, just for comparison. And we didn't think to look, but I don't remember seeing any insects in or on the water.

**December 10:** Dog needs a hike, back to Castle Park Trail. I stare again at the orange spot, up hill, down the hill, at the other spot where water has been eroding the trail.

I decide to visit the other orange splotch. I follow the Fern Ravine Trail that starts by the big picnic area, by that little wetland with the cattails and the bright green *Juncus*. Not far past the bridge, after the Fern Trail crosses Sequoia-Bayview I peer down into the creek. There's a small, faint blotch of dull orange in the creek bed. Waaaay down in the creekbed. I'm not climbing down for a look with only this aged dog for company. Lassie he's not.

I've never paid much attention to paving and drains at Chabot, so I head over to look at garages and buildings and pavements and storm drains.

Up the Chabot driveway, there's the 2-story parking garage. A sign points to a drive, and "Employee Parking" so I go that way. Parking along one side of the drive, a loading dock along the building. Past the buildings, there is parking on both sides of the drive and then there's a new-looking parking lot a bit further on. It adds up to a lot of hard surface. I see some drains, where do they lead?

I find one storm drain along Skyline, and a drain that leads under the road. Time to make a map with the GPS data I've been collecting, see how these puzzle-pieces fit together.

**December 11:** Kristen and I did a bit of checking-and-planning work in Dimond Canyon, and I told her about the orange stuff, about looking at the Chabot parking lots, showed her the map I'm working on. She wants to go, after a good rain so we can look at the creek, the water, what's going on up there. And she needs to scout out the parking lots; we're providing plants for one of them.

**December 14:** Kristen and I drive up to the Chabot area, just as the rain is starting, about 1 pm. We cruise the parking lots, spotting some drains, looking at the slopes around them.

As we head back along Skyline towards the Sequoia Arena, we stop to look at the storm drain that I spotted before. It seems pretty well behaved, a small spurt and emptying into a thick bed of redwood needles. Kristen is suspicious of a weird utility-building structure right by the road...and there's a manhole-thing there too. But we go on to the Sequoia Arena parking lot; it's starting to rain pretty hard. On with the rain gear, coats and pants too.

Along Acacia Alley, we wind our way between tall skinny acacias drooping with moisture. There is a silty little rivulet running down the trail, joined by another silty rivulet from the Bayview trail. It runs right to the spot where we climb down to the creek and the orange splotch, (sliding down wet mud is easy in plastic pants!). We poke around in it; I have plastic gloves and a baggie in my pocket, so we take a fistful of orange goop. It forms a thick layer on the bottom of the seep. Can we get this tested somewhere? Should we? How much would it cost?

We clamber back up to the trail. A brisk little stream of water is flowing across the trail, and the eroded gully has deepened noticeably from Friday's heavy rains. A few more inches have been gnawed off the downstream edge of the trail. Erosion in action.

We start looking at the uphill side, where the stream is gurgling in the increasing rainfall. Shall we see where all this water is coming from? Yeah, sure!

Through the blackberries and ferns, over and under the logs, back and forth across the creek, around the poison oak and stinging nettle, finding a cool patch of *Ribes* and some admirable

mushrooms, surprised by a sudden bend in the stream, about 650 feet over and 100 feet up, we find it: a big culvert and drain structure with a spillway, just below Skyline Road.

We climb up to Skyline, and we're directly across from the outbuilding-manhole structures. And there's a storm grate, with straw-wattle bumpers around it, loud rushing water below. Do the storm drains under Chabot concentrate all of the runoff into that single culvert under Skyline? Get it off the property as quickly and cheaply as possible, and it's someone else's problem?

Enough wetness for today, tracing the other strip of erosion across the trail can wait for another hike on another rainy day.

**December 17, 2002** There's been more rain, think I'll have another look. There's a spat of heavy rain as I drive up Skyline, it ends just as I park. Great timing, Smiling Dog and I won't get soaked, and the water will be running fast,

The trail erosion in Acacia Alley is already noticeably deeper, more rocks showing through. At the site of the Orange Goop, the gully is much wider and deeper than just 3 days ago. A fire road for 4-wheel drive fire trucks? Perhaps the El Niño fed storms will reveal the mystery of the orange goop: the trail will erode to the source!

The high water has pretty much washed away the orange bed-lining below the spot where the clear stream meets the orange seep water, but there's still a big patch. The Lady Ferns look rather abused...looks like the water was well up out of the channel for a while.

The other eroded spot, a bit farther down the trail, has gotten a lot worse too. The large Bay tree that used to anchor the downstream side of the gully has fallen, quite tidily, into the streambed, so it's not blocking the trail at all. But the erosion will probably speed up.

I wonder: do these two spots (and many others) get eroded every winter, then repaired before fire season?

