



Station Fire near Briggs Terrace, Aug. 29, 2009

I previously [posted](#) that Sierra Club wants Governor Brown to re-examine forest offsets under California's cap-and-trade program. One of the commenters to that post wondered if the plan to plant 10,000 acres of trees in the Angeles National Forest was an example of such an offset. Now I don't know if that planting would count for offsets in AB 32's cap-and-trade program, but it is certainly an attempt to offset carbon emissions from Chevron's El Segundo refinery. In order to expand Chevron's refinery, Chevron was [required](#) to make greenhouse gas emission reductions as part of the environmental analysis.

161,000 acres in Angeles National Forest burned in the [2009 Station Fire](#). The National Forest Foundation and the U.S. Forest Service plan to [replant 10,000 acres](#) with a variety of coniferous trees. (The rest of the acreage is chaparral and riparian environments.) South Coast Air Quality Management District (SCAQMD) has generously donated [\\$1.5 million in "mitigation fees"](#) from the Chevron El Segundo plant, presumably to offset the refinery's carbon emissions. Two questions come to mind: is the restoration ecologically sound and are those offsets real?

Some have questioned the choice of conifers for replanting (or the [idea of replanting at all](#)). The mix includes big cone Douglas fir, Coulter, Jeffrey, and Ponderosa pines, and incense cedar. Given climate change, the forest is slowly converting to a [chaparral biome](#), so Nancy Steel [questions](#) whether the new plantings will survive. Jon Keeley, a U.S. Geological Survey biologist, [objects](#) that you shouldn't plant Coulter pines in what was a Douglas fir forest. Forest offset programs are rife with this type of controversy. If you want a lot of offsets for your money, you need to plant trees (not shrubs). And some trees are cheaper or easier to plant than others. Such economic considerations often don't coincide with ecological considerations.

I also wonder if anyone has seriously considered the math behind these offsets? [Here](#) is Sam Atwood from SCAQMD:

The trees are going to be sequestering carbon dioxide for the next hundred years. . . . It will make a difference in the Los Angeles area.

SCAQMD [estimates](#) that the replanting will offset 280,000 metric tons of CO<sub>2</sub> emissions from the refinery. Now, I won't get into the wisdom of operating a refinery that, in [Chevron's words](#), "is wedged between two residential communities on the Santa Monica Bay." But I do have some questions about whether these offsets make a bit of difference to Los Angeles' greenhouse gas emissions.

Does letting Chevron count the replanting of a burned forest against its refinery emissions amount to double-counting? The forest had stored carbon for, let's say, one hundred years. Then it burned in 2009, *releasing* much of that carbon into the atmosphere. Replanting could, in theory, re-capture an equivalent amount of carbon over the next one hundred years. But by 2109 we have—at best—only reached the status quo that we began with in 2009, before the fire. How much refinery emissions have been accounted for with the planting? Zero, by one estimation. The Forest Service did not need to obtain emissions allowances when the forest burned. Yet it now creates credits when the forest is re-grown.

But, you might say, that forest would never regrow without our intervention. So it is still a net reduction in emissions, given that we have no forest in 2011 and forest in 2109. But we aren't planting a forest on a golf course, or an abandoned parking lot. This is a *national forest*. Chevron (through SCAQMD) is spending \$1.5 million to protect tree growth in an area that already protects tree growth, and calling that mitigation. This fails one of the tests for forest offsets: that the offset be *additional*.

Photo courtesy <http://www.zigzaglens.com>.