California Surveyor

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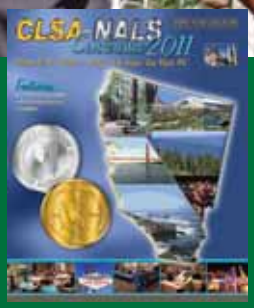

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The California Surveyor
526 So E. Street, Santa Rosa, CA 95404

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***Jim Lutz** is a Research Associate in the College of the Environment at the University of Washington. He studies decadal to centennial forest change, with special interest in old-growth forests and the changing rates and patterns of tree mortality.*

Return to the Yosemite Forest Dynamics Plot

July 2010 marked the return of the scientists to the Yosemite Forest Dynamics Plot (YFDP), and along with them, the Land Surveyors. In case you missed the article in the Summer 2009 edition of California Surveyor (Issue #159), following is a brief summary of the project and the work we did last season.

Established in 2009 as one of the world's 40 Smithsonian-affiliated forest dynamics plots, the YFDP was carved out of a portion of the Rockefeller Grove near the western boundary of Yosemite National Park for the purpose of mapping and tagging all woody stems greater than 1 cm in diameter. Researchers, led by James A. Lutz, Ph.D., from the University of Washington (UW), will be studying the life and death of these trees and their shrub-like cousins for decades to come. The surveyors' role in all of this was to establish a 20-meter grid covering 25 hectares; sounds easy, right? Well, maybe not so easy - follow me here. Access is via an old logging road whose terminus is roughly the middle of the westerly line of the plot. From there, we worked steadily downhill and farther away from the road every day.

The routine was to run random traverses from west to east, zigzagging through dense forest, while staking out and setting the grid corners. All without the benefit of a machete – all interfering tree limbs and brush had to be tied down or held off line (glad we brought those UW students with us!). After nine hours or so of scrambling through the forest, egress was back through our original

footsteps, carrying out everything we carried in, with the exception of our lunches and the stainless steel pins that served as grid point monumentation. Once the east line was reached, respective crews turned north and south to tie into each other's control. By the end of the week, we had

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surveyed roughly two-thirds of the desired 25 hectares. We were all a bit disappointed that we didn't complete our task; task mastering is after all what we're paid to do. However, as volunteer surveyors our production was good; a small army of thirty or so researchers had mapped and tagged a mere 10 hectares. Many of us knew then that we would return to complete the work the following year.


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Surveyors Return to the YFDP

So there we stood, July 2010, three volunteer survey crews, knowing full well what lay ahead of us; this year we would complete the grid. Originally square in shape, the plot was modified to rectangular by Dr. Lutz to capture more diversity, eliminating some areas disturbed by the 1930s logging in the northernmost tiers, and extending the plot farther to the east (and did I mention, farther down hill?). Berk Blake, PLS, who once again served as the project coordinator, provided the ASCII files with coordinates of the proposed grid corners and last year's control scheme. Blake and his party chief Jon Bratt, along with two willing students from UW, began a control traverse at the roadway terminus on the project base line, winding back down the access road and circling around to the new southeast corner of the plot. At this point they turned north and tied into control set by the other two crews run by Marta Alvarez, PE, PLS, and John Knox, PLS. Alvarez and Knox, assisted by Margaret Martinez and Patrick Busby, PLS, and another four willing UW students began their traverses on last year's control at the old east line and proceeded on parallel paths toward the new east line.


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Once the east line was reached and all possible grid points were set, the crews turned north and began parallel traverses back to the west. At the end of four days, all of the pins were in the ground and there was much rejoicing. As he did last year, Blake will be reprocessing all the raw data and delivering the resultant coordinates for all set monuments. Now one year wiser, Dr. Lutz assembled an even larger army of researchers, roughly forty strong, consisting of fellow professors, fellow forest professionals, grad students, returning students (yes, one year of punishment wasn't enough for some of them), and new student volunteers. They located the trees within each grid square using a basic station/offset method using laser rangefinders, holding our final reprocessed coordinate values for each corner monument (remember the way we used to do topographic mapping – measuring down and out from the curb lines?). And yes, this year they too completed their task, and also did much rejoicing. In all, 35,000 trees were tagged!

Prescribed Burn Nearby

All went off without a hitch, unless you consider being in the forest while the Park Service was conducting a prescribed burn just over the hill from where you are working to be a hitch. The long planned burn had the goal of reducing fuel accumulation from the years of fire suppression since the land was deeded to Yosemite National Park. The burn was conducted on the last day of the surveying, so we needed to establish different ingress and egress routes, along with an evacuation plan. We were promised a thirty-minute warning should evacuation become necessary; we were told that the fire crews could hold just about any line for thirty minutes. OK then, as we walked in that day on our new access route, I could only picture my thirty-minute emergency escape plan. The scramble back uphill to the edge of the plot culminated with a half-mile sprint straight up a literal 2:1 slope (who chose this route?) following the fire hoses to the helipad at the peak. All to be done at the end of the day. Carrying all the gear. Busby and I joked that we'd let the students carry us out like British royalty on freshly hewn pine boughs. In the end, the Park Service controlled the burn, and we had just one more anecdote for the campfire. In summary, this year was not unlike last year. Hard work, surrounded by stunning forest, accompanied by fantastic students and faculty, excellent camp chow, refreshing campfire conversations, bathing in icy snow-melt streams; the stuff of lasting memories. But there will be no next year – we worked ourselves out of a job. Unless of course the researchers want another Big Plot somewhere…■

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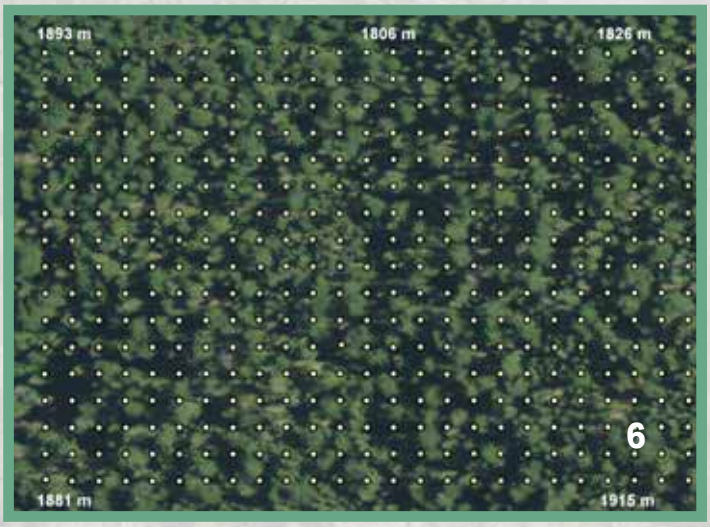

1) *Craig Smith sets out a grid corner. Photograph by Margaret Martinez.*

2) *John Knox sights line while students hold branches out of the way. Photograph by Patrick Busby.*

3) *Marta Alvarez instructs student Kimiko LaHaela. Photograph by Margaret Martinez.*

4) *Last break before descending to the plot. Left to right are: Margaret Martinez, Lisa Clark, Marta Alvarez, Warren Childe, Kimiko LaHaela, John Knox, Craig Smith, Andrea Blin, Patrick Busby. Photograph by Marta Alvarez.*

5) *James Lutz supervises as survey crews prepare for the long hike into the plot. Note the fire hose in place for the prescribed burn. Photograph by Scott Batiuk.*

6) *The completed Yosemite Forest Dynamics Plot 20 meter grid with principal elevations shown. The background (2009 National Agriculture Imagery Program (NAIP) orthoquad) allows comparison of the size of the tree canopies with the 20 meter grid. Image by Jim Lutz.*

7) *Left to right are: Patrick Busby, Lisa Clark, John Knox, Tucker Furniss, Andrea Blin, Warren Childe. Photograph by Craig Smith.Ï*

8) *Warren Childe rests and reviews the day's progress. Photograph by Marta Alvarez.*

9) *John Knox*

10) *Lisa Clark*