More Than a Walk in the Wilderness

By Michael and Amy McGrann, "The Mad Scientists"

As far as we know, Amy and I may be the first people to thru-hike the California Pacific Crest Trail (PCT) as part of PhD research. Close to the end of our master's program in 2003, Amy planted the idea in my head that we should hike the PCT. She did not have to work hard to persuade me. The idea was to celebrate the completion of our schooling before settling into our careers, having children, etc. So we started off on our first PCT trek in the summer of 2004 with the modest goal of completing the length of California in one season (from Mexico to Ashland, Oregon, approximately 1,720 miles). We thought that this was a once in a lifetime experience. Fortunately, we were wrong.

After successfully completing the California PCT in 2004, I started work as a wildlife biologist. At that point, I was not interested in continuing my education – I wanted to develop my career, instead.

Yet (and what I'm about to express, I suspect, is a common syndrome among long-distance hikers) in "normal life" I found myself constantly thinking about life on the trail: about the beauty, the solitude, the people, the freedom, the pain, the discomfort, the sweat, the dirt, the hunger.... I loved life on the trail. I missed it. I wanted it again. But, I also had a strong passion to be a wildlife biologist, and I did not want to give that up. Fortunately, my few months of experience as a professional wildlife biologist planted a solid research idea in my mind. I realized that the PCT is a gold mine for ecological research, which no one seems to have properly tapped. The PCT is a continuous transect through relatively unaltered natural landscape, sampling the majority of vegetation types in California. The first person with whom I shared this idea was my wife. As always, she was supportive and encouraged me to pursue this goal.

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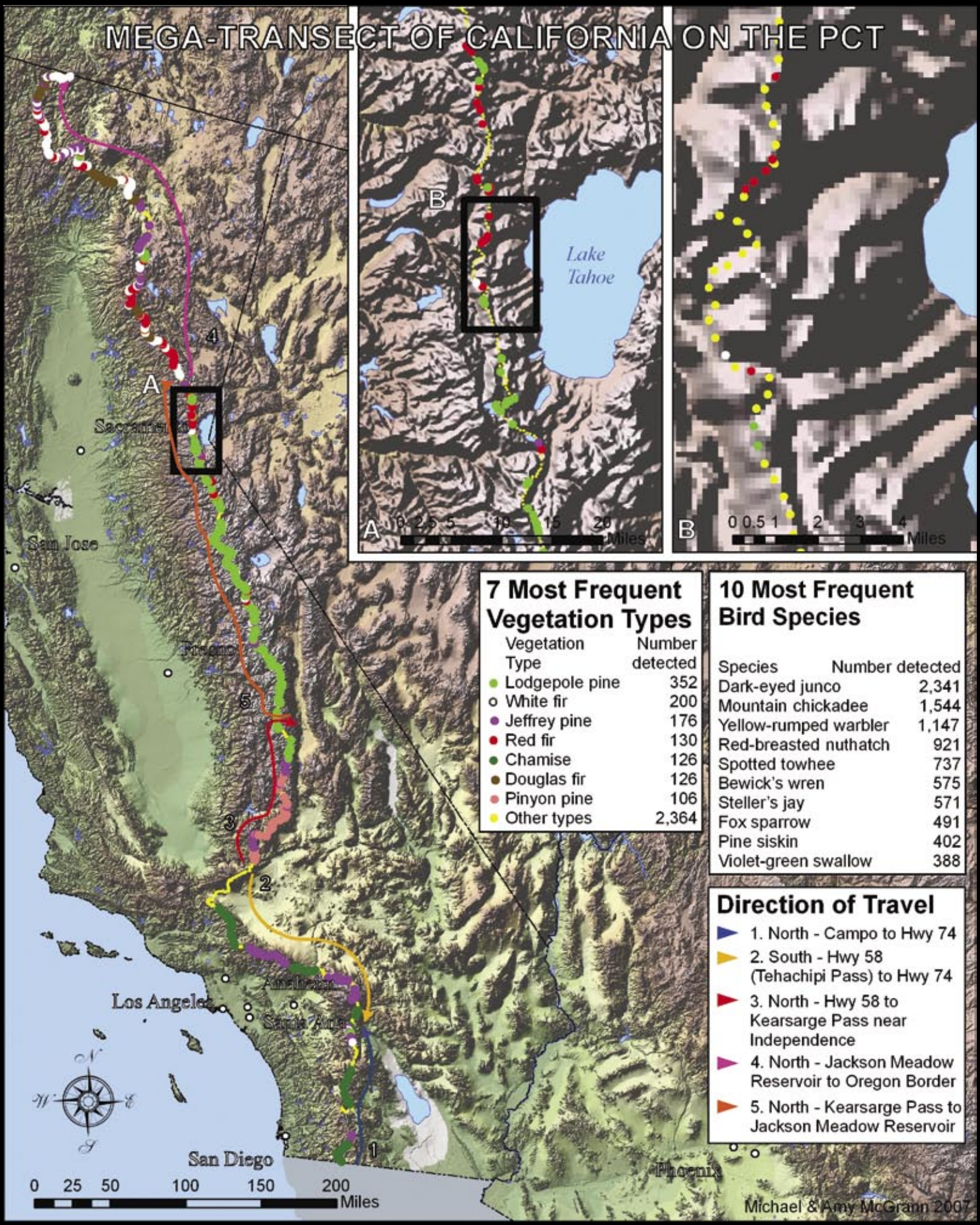
MAP CAPTION: The main frame of the map on the next page shows the entire transect (the California PCT). Blow-up boxes A and B zoom-in near Lake Tahoe and show that the transect is a series of points where we conducted our rapid assessment of vegetation and birds. The distance between each point was usually about 0.4 mile, although this distance varied based on terrain and our walking speed. Arrows indicate the direction of our "flip-flopping" on the PCT. The table inserts indicate the most frequent vegetation types and bird species encountered on the trail. The points are color-coded to show where these vegetation types occur on the transect. Note the large number of "other types" of vegetation detected, reflective of the high level of flora diversity occurring on the California PCT.

PHOTO CAPTION TOP: Pictured here are members of the large Asteraceae (sunflower) family of flowers found in many locations on the trail. Photo by Robert Francisco.

PHOTO CAPTION ABOVE: Michael and Amy McGrann, "The Mad Scientists," on their 2004 California PCT hike.


MEGA-TRANSECT OF CALIFORNIA ON THE PCT
Lake Tahoe
A
B
0 2.5 5 10 15 20 Miles
0 0.5 1 2 3 4 Miles
Sacramento
San Jose
Fresno
Los Angeles
Anaheim
Santa Ana
San Diego
Phoenix
1
2
3
4
5
0 25 50 100 150 200 Miles
7 Most Frequent Vegetation Types
Vegetation Type | Number detected
Lodgepole pine 352
White fir 200
Jeffrey pine 176
Red fir 130
Chamise 126
Douglas fir 126
Pinyon pine 106
Other types 2,364
10 Most Frequent Bird Species
Species | Number detected
Dark-eyed junco 2,341
Mountain chickadee 1,544
Yellow-rumped warbler 1,147
Red-breasted nuthatch 921
Spotted towhee 737
Bewick's wren 575
Steller's jay 571
Fox sparrow 491
Pine siskin 402
Violet-green swallow 388
Direction of Travel
1. North - Campo to Hwy 74
2. South - Hwy 58 (Tehachipi Pass) to Hwy 74
3. North - Hwy 58 to Kearsarge Pass near Independence
4. North - Jackson Meadow Reservoir to Oregon Border
5. North - Kearsarge Pass to Jackson Meadow Reservoir
Michael & Amy McGrann 2007

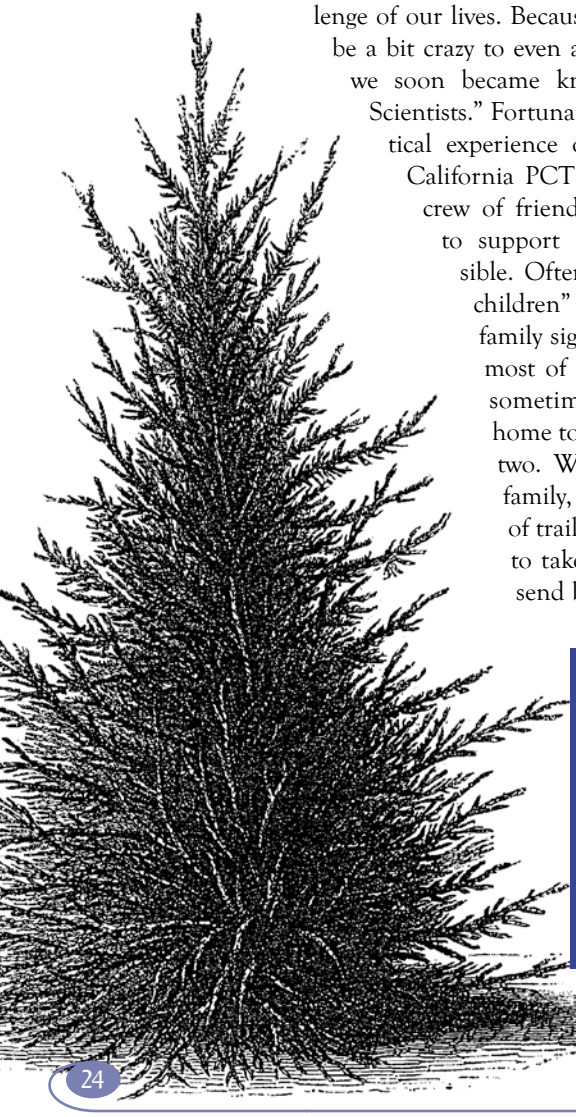
A Mega-Transect of California Along the PCT (continued):

Planning the Project

We began searching for PhD programs, and soliciting professors to serve as our advisor. Our search led us to **Dr. Deborah Elliott-Fisk**, a geographer and ecologist at the University of California, Davis (UC Davis). She was very supportive of our idea from the beginning, in fact, so much so, that we decided to begin our work even before we knew that we were admitted to the UC Davis geography program. We began sharpening the skills we would need to reach our goal. For instance, I stamped in my brain the vocalizations of nearly 200 species of birds by listening to recordings on a daily basis and practicing both my visual and audible skills in the field. Amy continued to sharpen her botany skills. We also began acquiring the equipment we would need, such as handheld computers with GPS attachments, binoculars, field guides, a digital camera, etc. I programmed electronic data forms for collecting data on our new computers. Of course, as California thru-hikers, we also needed to keep our research equipment to a minimum because we'd need to carry it, along with all of our normal gear, for 1,720 miles in order to complete our study of California's mega-transect.

Completing the Mega-Transect

Hiking more than 1,700 miles is a difficult enough process on its own, but by adding data collection, it became the greatest challenge of our lives. Because one would have to be a bit crazy to even attempt such a thing, we soon became known as "The Mad Scientists." Fortunately, we had the logistical experience of having hiked the California PCT before and a whole crew of friends and family willing to support us in any way possible. Often called the "spoiled children" on the trail, we had family signed up to meet us at most of our re-supply points, sometimes even taking us home to recharge for a day or two. Where we didn't have family, we took advantage of trail angels (and we'd like to take this opportunity to send big thank-you's to the **Saufleys**, the **Heitmans**, and **Billie** and **Ed**, our hosts at **Drakesbad Guest Ranch**).



To the left is an illustration of a Douglas Fir, one of the seven most frequent vegetation types on the PCT according to the McGrann's study.

On the trail our days began like those of most long-distance hikers with an early start and breakfast bars. Then, we donned our packs and started hiking, but after just ten minutes, we stopped to collect data for five to fifteen minutes. Amy did a rapid assessment of the vegetation, recording the dominant vegetation and its percent cover, height, and other structural characteristics. I collected data on the birds, listening and watching for anything within a 50 meter radius of our point. After recording all this data in a handheld computer, we would put on our packs, hike for another ten minutes and start the process all over again. We continued in this manner until twilight each day, repeating our data collection routine a total of 3,580 times until we'd hiked and studied the trail's length in California. This mega-transect required over five months to complete (April 2nd to September 8th).

Our hike was not without its unforeseen difficulties. Unlike the 2004 season, weather and snow were huge factors to contend with in 2006. Referring to the map that accompanies this article, one will notice a fifteen mile gap in the data in the Laguna Mountains of Southern California, where (at around 5,000 to 6,000 feet) we found ourselves hiking in a full-blown blizzard with snow that falls sideways. When walking, we could not look forward because the pelting wind, snow, and ice were too painful. We had to make short steps in a straddling fashion with both our trekking poles to one side to keep the wind from knocking us over. This, of course, made data collection impossible. After hiking about fifteen miles in the blizzard, we made it to Sunrise Highway where we hitched a ride to a hotel room in Julian. There, Amy shivered in a hot bath for over five minutes before recovering.

Additionally, the winter was late in arriving in 2006, which meant the snow pack in the mountains in southern California and the Sierra persisted longer than normal. Because post-holing in the snow was not conducive to collecting our data, we modified our schedule and "flip-flopped" (skipped ahead and changed the direction of our walk) multiple times on the transect. We did this to give the snow time to melt in the higher elevations. Fortunately, we have a lot of friends and family throughout California who helped us in this regard. The map accompanying this article indicates the direction of our walk and where we flip-flopped due to snow at the higher elevations.

Purpose of Our Research.

Although our ulterior motive for our research is PCT adventure, our official goal (as far as our PhDs in geography at UC Davis are concerned) is to contribute knowledge to wildlife biology. More specifically, we are using the PCT to ask questions about wildlife-habitat relationship models (WHRs). Simply put, these models are used by natural resource agencies, land managers, researchers,

Pictured above are the McGranns conducting rapid data collection during one of their typical research stops. The McGranns stopped to collect data approximately 3,580 times during their California hike.

environmental consultants, private companies, and anyone else interested in making predictions of wildlife occurrence based on the kind of vegetation at a given location. These predictions are important when making conservation minded decisions with respect to wildlife. Our research is focused specifically on California's WHR, developed by the **California Department of Fish and Game**.

Preliminary Results

We are currently working on the analysis of the very large and complex dataset collected during our PCT trek. Based on this analysis, we will return to the PCT to conduct an intensive sub-sample (at points selected from the original set of points) during the spring and summer of 2007, collecting even more detailed data this time around.

One must keep in mind that the results we have reported on the map accompanying this article are tentative as the data is in the process of being quality checked. We plan on reporting a complete analysis in a peer-reviewed scientific journal. We detected hundreds of vegetation classes (types) and nearly 200 species of birds during our hike, but we have reported only the few most prominent ones here. Please watch this magazine for updates on our research and for information about our full analysis when that becomes available.

Closing Reflection

Sometimes when we explained our project to others, they expressed concern that our hike could become a chore, work, or even tedious due to our frequent stops for data collection. Admittedly, the task was frustrating at times, especially in the heat of exposed chaparral. However, the overall effect of the frequent pauses was a very positive one. Our methods forced us to pay attention to the sometimes drastic, but often subtle, and important changes in the environment. We became intimately aware of the tremendous plant and animal diversity that surrounded us and the trail.

Without our regular pauses, we would not have heard the powerful swoosh just feet over our heads of a peregrine falcon slicing through the air in pursuit of a flock of gray-crowned rosy finches (at Donohue Pass, at approximately 11,000 feet). Or, we might not have experienced a Costa's hummingbird scolding and buzzing us for standing too close to its tiny hummingbird nest, built inches off the trail at waist height in a clump of weeds (near Mission Creek in southern California.) We might not have witnessed three pileated woodpeckers swooping in and out of the dense white fir canopy, only yards away, seemingly serenading us with their loud wild-sounding rattle call (this having occurred near Buck's Lake in the Plumas National Forest). Now, multiply these amazing experiences many times over and one can understand how stopping on the trail can be as powerful and enriching as going. If one is patient, and one knows what to look for, the PCT has much more to offer than a walk in the wilderness.

Questions or comments about the study or this article? Contact the authors directly at mcmcgrann@ucdavis.edu.