

The Ecological Society of America's SEEDS Program



SEEDS Regional Field Trip

San Francisco Bay Area

Hosted by Stanford University, Jasper Ridge Biological Reserve

March 4th – 8th, 2015



SEEDS Regional Field Trip participants at the Monterey Bay Aquarium.

Overview:

The SEEDS program just hosted its fourth Regional Field Trip! 16 students from all four SEEDS Chapters (Stanford University, San Jose State University, University of California Berkeley, and University of California Davis) in the Bay Area joined us for an unforgettable weekend in the hills of Los Altos, CA from March 4-8, 2015. With the help of Cindy Wilber at the Jasper Ridge Biological Reserve at Stanford University, our participants had the opportunity to visit and interact with scientist, educators and graduate students at various research and educational attractions from the Hopkins Marine Station to the California Academy of Sciences.

We had a memorable weekend staying at the Hidden Villa Hotel thanks to our hosts the Jasper Ridge Biological Preserve at Stanford University and the Stanford University SEEDS Chapter. A huge thanks to Cindy Wilber, faculty advisor and our ESA members for providing the funding for these Regional Field Trips.

Here is a brief report written by the participants of this unique Field Trip:

Group 1: Dianne, Anna, Christina, Malina, Natasha

Wednesday night, March 4th

Our SEEDS regional fieldtrip began March 4, 2015 with arrivals at Hidden Villa Hostel. Conditions were cool, crisp, calm, and clear. The Berkeley chapter arrived at the hostel first, followed by Stanford, San Jose State, and finally UC Davis. Multiple rounds of introductions and fun facts were exchanged, including interests and long term/career goals. It was interesting to hear the diversity of interests and awesome cool facts. We ate dinner together and it was comprised of lasagna, bread, Caesar salad, fruit tray, and a dessert plate. Fred Abbott went over the agenda, rules, expectations, and participants divided themselves into bunkhouses. After that most of us went to sleep.

Thursday, March 5th

We began the day by cooking breakfast. Group breakfast cooking was a success – bacon, eggs, pancakes, and fruit were made. Individuals got up early to start breakfast and others

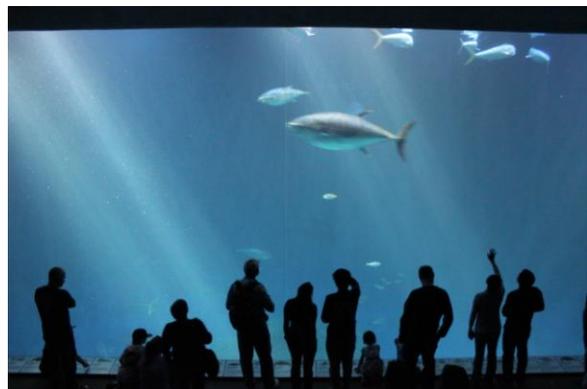


joined as they came in. It took us a while to get ready and we ended up leaving about 15 minutes behind schedule. Our first stop was the Hopkins marine station; we joined a few more Stanford SEEDS undergrads there as well as Bill Gomez. The conditions were beautiful, definitely California weather: warm, sunny, slightly breezy, and cloudless. Upon arriving, we got a tour from Dr. Joseph Wible. This included a short history of

the marine station as we walked around the complex. After the short tour, Dr. Wible delivered the group to Dr. Steve Palumbi. Palumbi gave 45 min lecture on genetics, heat-resistant coral populations, illegal whaling, and public outreach, followed by short Q&A. We all thought it was super interesting and really showed us how research can be integrated into changes in policy and large scale action. While we had lunch, overlooking the sea, we observed sea otter, seals, and cormorants.

Following a short lunch, we had an informal chat with Dr. Gilly about educational background and squid research. Dr. Gilly's lab was fairly small so we split into two groups which rotated between Dr. Gilly and one of his grad students, Hannah Rosen. Dr. Gilly mainly talked about the path he took that led him to his current position while his grad student talked about her ongoing research on squid behavior. There were lots of dogs at Hopkins; it seemed like a really cool and relaxed environment to study/work in.

After visiting Dr. Gilley, we walked to the Monterey Bay Aquarium and were set free to explore current exhibits. On display were cephalopod, jellies, and kelp forest habitat enclosures. We spent about an hour and a half at the aquarium and then met up to go back to Hopkins and try tide pooling.



Jacob Winnekoff (Hopkins undergrad) led us down to the waterfront and we began tide pooling. It was a super amazing opportunity to get to look at the tide pools since the Hopkins station is mainly for research. We saw sea anemones, a Hopkins Rose nudibranch, mussels, sea stars, birds, chitons, upper intertidal alga species, sea otter and pup, seals and so much more! As we were about to leave, we observed two dead sea lion carcasses on the beach. Once we got closer we noticed that apart from the sea lions there were several bird skeletons and carcasses, all in various stages of decomposition; it was kind of a strange sight.

We left Monterey and headed back to the hostel. We caught a bit of traffic and 2 of the 3 cars stopped to pick up Costco pizzas. We ate dinner together and got to know each other some more. Later in the night we swapped amusing stories by campfire. The night was chilly but clear and there was a full moon! Minimal werewolf activity.

PERSPECTIVES

Overall we thought there was a lot of information to digest on this day. We also thought that though we got to meet a lot of awesome professors there was not much time for casual interaction and networking. Natasha was able to speak more extensively with a professor, but only by sacrificing some aquarium time. The aquarium was incredibly fun but would have been nice to have more time to explore! Overall we thought the trip was super informative.

Group 2: Jenna, Jas, Sohil, Su-Lin

Friday, March 6th

The weather was beautiful and the car was short. We ended up having a nice extended breakfast. The first thing we did at the Academy of Science was meeting the Chief of Science and Sustainability, Dr. Meg Lowman. She really pushed for having more females working in the field of science, since she was typically the only woman when she did graduate school and field work. Dr. Meg took us to the rain forest exhibit. It was very humid, but had many



butterflies and too many children running around and yelling. We rushed the rainforest, stopped by the aquarium for a few minutes then waited for the planetarium. They were showing "Habitat for Earth" which was about the ways different ecosystems interacted with each other and humans. There was a person who started off the show telling corny science jokes. She also told us that most of the people in the room will probably be alive by the time life not on our planet is found elsewhere. The One fact that really stood out after watching

the video was that the SF Bay had the most aquatic invasive species out of anywhere else on the planet. This is because so many ships come in and out of the bay that it brings in a huge amount of nonnative species that compete with native species.

After the planetarium we had lunch and were joined by many people including Dr. Cindy Wilbur, Scott Loarie, and two instructors from the Teacher Institute on Science and Sustainability. Scott Loarie talked about his phone app, iNaturalist. This app allows people to take pictures of things they see in nature, post it on the app, and have other people identify the species. This app is a way to spread knowledge, but also keep track of the biodiversity found in an area. The two instructors talked to us about their own personal experience in the field of science, but also of their program that teaches elementary school teachers about science. They stressed how important it was to interest kids in science at a young age, which is why training the teachers is so essential. From there we were given a half an hour or so to explore the Academy of Science on our own. Sohil went to the living roof to see all the different plants, and went back to the rainforest. Jas, Jenna and Su-Lin went back to the aquarium to see more fish!





Once we left the aquarium we went to Fort Funston to explore the beach and hear about Daniel Santillano's work and path he took to get to the job he's at today. He went to school for microbiology, ending up working in policy for a while but now works with marine restoration. While we were in the beach parking lot we saw many dogs. Once we were at the beach we saw sand crabs, a couple dolphins, sand dollars and more dogs! It was a long trek up the hill back to the parking lot, but once we finally got to the top we left to go back to the villa.

We set off on a hike after we got back to the villa. We hiked about an hour or so to see the sunset, but weren't really able to over the trees. However, we saw many cool plants like minors lettuce which tasted just like spinach. We also found a banana slug and Sohil finally got his first kiss! (with the banana slug). When we reached the top of the hill we were able to see the entire bay area including Stanford, Mt. Diablo and the San Mateo Bridge.

We feasted on Chipotle once we got back from the hike. After dinner we got an environmental art lesson from a grad student named Matias Lanas. We were taught that when drawing art for science you don't need to necessarily focus on how it looks, but what you record. He made us do different exercises that emphasized that. He also made us do an exercise where we took a leaf, put it away, and tried to recreate that exact green the leaf was. This exercise demonstrated the way we perceived the color green and how green in nature actually contains other shades of red or brown. After the lesson we spent the rest of the night either relaxing inside or outside next to the campfire.



Group 3: Kendra, Alan, Chaucer, Karen (and Amy!)

Saturday, March 7th

We had a relaxed and very slow morning after roasting marshmallows by a campfire the night before. Breakfast was the usual, eggs with sausage, cereal, and toast for those who wanted. We loaded up the vans at 8:50, and headed over to Jasper Ridge Biological Preserve to meet up with Cindy Wilber at 9:15. It was a beautiful sunny Californian day. Cindy is the education coordinator at Jasper Ridge, and had prepared a cornucopia of snacks to welcome us to the Jasper Ridge classroom. There had been some miscommunication with our presenter today, Dr. Rodolfo Dirzo, who walked in about an hour after we did, but the extra downtime gave us an opportunity to learn about Jasper Ridge's Sun Field Station from Bill Gomez, a volunteer docent with the preserve.



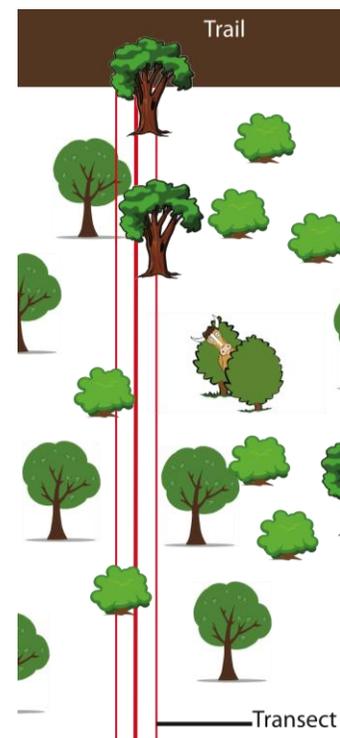
Rodolfo arrived and gave us a presentation about floristic diversity and ways to quantify biodiversity. He taught us about the inverse relationship between species biodiversity and distance from equator and quantitative analysis of forest biodiversity, namely the importance value index (IV). The IV is made up of three metrics: species density, frequency, and dominance. He taught us how to use forest transects to measure these variables through a standardized method.

We then suited up into Tyvek suits (aka giant space suits) that protected us from the abundant poison oak that was found throughout the reserve, and marked diameter breast height (DBH) on our suits so we would have an easy reference for our survey. We then headed out into the reserve and hiked across the Searsville Dam into blue oak woodland. Dividing into four groups, we split up the work so that each group was in charge of two 50 x 2 m transects. We surveyed all trees and vines that had a diameter of at least 1cm and were at least 1.3 m tall (DBH), recording species name and DBH (or base diameter for vines). This took a while and we crawled our way through the poison oak which was pretty scary sometimes.

Once all of the transects were complete, we reconvened and pooled together our data, summing the total number of each species and their diameters. We calculated the relative density, frequency, and dominance which allowed us to calculate the importance value of each species. We determined that the blue oak had the highest importance value, followed by toyon.

We sat around the whiteboard with our results and had a discussion about what it meant with Rodolfo. He asked some interesting questions, such as how to interpret the data and explain its importance to non-scientists. The conversation centered on the importance of biodiversity and how to communicate it to others, citing things like ecosystem stability, functions, and services. After our lovely discussion, we hiked back to the Sun Station.

Lunch was awesome and delicious and healthy and cooked by Cindy. We enjoyed eating outside at the picnic tables while observing the flora and fauna surrounding us, seeing many interesting birds. After lunch it was already 3:30pm, so many of the SEEDS group headed back to Hidden Villa to relax after a long day of fieldwork. Some however, stayed longer to assist with a camera trapping research project which involved riding an off-roading golf cart through many different ecosystems and crossing a creek to get to the camera trap locations. By 5:30pm everyone had returned



to Hidden Villa Hostel, and we broke out into journal groups to write this entry for you to read. Later tonight we plan to have a delicious home cooked meal and spend the evening making another campfire before we have to leave tomorrow morning.

For more pictures from this event, please ['Like' us on Facebook](#).