Sabbatical Report Fall 2013

Angela Chapman, Lecturer, Biology Program
California State University, Channel Islands

Birds: Surveys and Science on the CI Campus

Summary of Sabbatical Semester

I devoted the time provided by the sabbatical leave to work on understanding and documenting the avian community on the CI campus. Specifically, I

(i) carried out field work to establish protocols for conducting ornithological surveys and research on the campus
(ii) prepared study skins and began the campus collection of bird skins, nests and other related materials.
(iii) developed and launched a website to make the information broadly accessible.

Detailed Methodology

Prior to Fall 2013 I obtained permits from the U.S. Fish and Wildlife Service and the Department of Fish and Game to authorize me to collect salvage birds and/or their parts. During August and September I investigated rights-of-way, boundaries, the topography of campus and initiated GIS mapping. The Biology Program purchased a designated bird cabinet from the Western Foundation of Vertebrate Zoology (WFVZ) which I used to begin a small reference collection of bird material, some of which was obtained from the WFVZ.

The Springs fire, which occurred in May 2013 resulted in the majority of the vegetation surrounding campus to be burnt. I took advantage of this opportunity and designed transects to run through the burnt areas to enable me to track changes in avian diversity with vegetation recovery and to capture all the major habitat types.

A line transect is a method used to sample organisms along a fixed line. It is essentially a path along which I count and record occurrences of birds. I move along this fixed path, at least once a month, at approximately the same pace and use the same procedures to count the birds. This enables me to detect changes in bird species and estimate bird abundance and density. I will also be able to investigate differences between the burnt sites versus the unburnt sites.

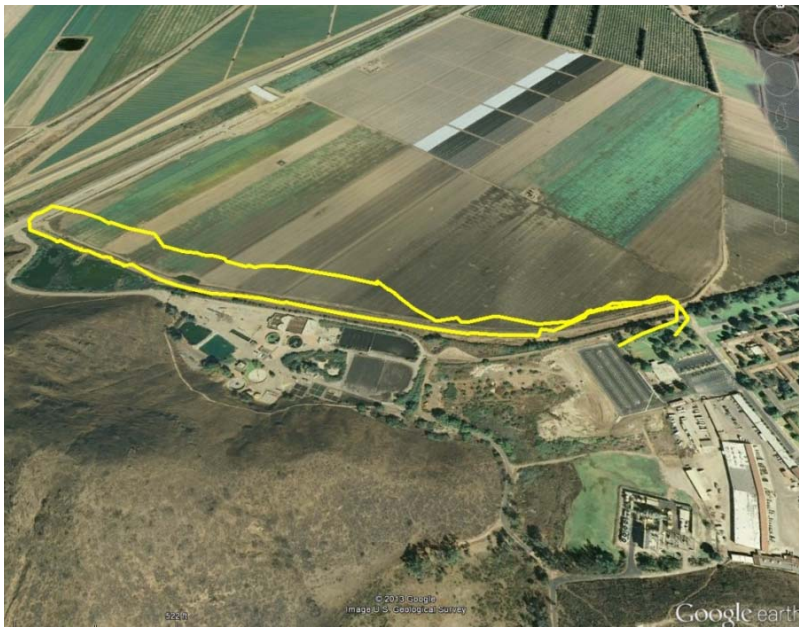
By October 2013 I had four transects (indicated by the yellow line on the map) in place:

(i) Peanut Hill Transect is behind Aliso Hall. This transect includes the plant nursery, the open grassy soccer field, some scrubby vegetation near a drainage ditch and the burnt Peanut Hill (29m in elevation). Average elevation is 18m. The transect length is approximately 2km.

(ii) University Glen Transect includes university buildings, a playing field, and the burnt areas adjacent to the residential area. The average elevation is approximately 25m. The transect length is approximately 3km.

(iii) CI Park Transect is essentially all burnt except for a narrow strip at the northern end adjacent to Calleguas Creek. This transect is adjacent to the old 'Water Rats' pond (which is partially visible but not accessible); it traverses a burnt hill with an elevation of 60m before passing through scrubby vegetation surrounding some derelict buildings (including the 'scary dairy'). The average elevation is 31m. The transect length is approximately 3km.

(iv) Creek Transect includes a concrete parking area, scrubby vegetation, Calleguas Creek and Black Mountain pond, (not within the University property but largely visible from the property). The average elevation is 13m. The transect distance is 3.5km.



I began data collection in October 2013 on all four transects. Bird species were logged into a Bad Elf GPS system enabling the information to be downloaded to a Google Earth map. Data has also been entered into a spread sheet for future analysis. These transects now form the basis for future bird surveys and research. Preparation of bird skins, and some skeletal and fluid specimens was ongoing. In addition, considerable time was devoted to reading the relevant literature.

During November, I began work on the "CI Birds" website and its design. I collaborated with Catherine Hutchinson, Michael Daniels and Eric Newton in this endeavor. In January 2014 the website became live: "CI Birds" can now be accessed via the Biology Home Page, under 'Resources'. The web address is: http://www.csuci.edu/ci-birds/. I added fifty species as a start along with some modest information. Going forward, my plan is to include all the bird species observed on campus with additional information.

In January 2014, as planned, I recruited the first student who will be working with me on the project. We will submit a poster at the upcoming 'Southern California Academy of Sciences' conference in May 2014. Ornithology (Biol 451) will also be taught in Fall 2014 where it is expected more students will be recruited to the research.

Benefits to the university and its students

It has been said many times that what we don't understand, we don't care about. What we don't care about, we don't protect. A broader knowledge and understanding of the campus birds and their habitats will foster appreciation and better stewardship of our campus. I have talked several times with groundskeepers regarding the importance of newly planted vegetation along the Creek Transect.

A biotic inventory is an important foundation for further study. This project has interdisciplinary appeal. It will serve to enhance student skills in multiple disciplines (e.g. ecology, environmental science, conservation, art, communication, web design).

With a reference collection now established and survey protocols in place students can enhance their skills in several areas. For example, this project would provide students with a unique opportunity to

- practice bird identification skills
- gain knowledge of field techniques
- plan research and work as part of a team
- collect data
- interpret and analyze results
- communicate results to the wider scientific community
- present research findings at future conferences

Now the project is underway it will contribute to CI's efforts to become known for student research. Several possible pathways present themselves. Students who successfully complete the Ornithology class (Biol 451) or the Ecology and the Environment class (Biol 433) would find a natural progression into Independent Research (Biol 494). Additionally, this project is ideally suited to interdisciplinary courses and would dovetail well with the UNIV courses as outlined in SPIRaL (the Step Ladder Program for Interdisciplinary Research and Learning).

In Sum

During the sabbatical semester, I accomplished my main goals. Lecturers in the teaching intensive environment of the California State University often find it difficult to be productive scholars. Therefore, I am thankful to the Sabbatical Leave Committee, the Provost and the President of the University, for funding this opportunity. I am also very thankful to the Biology Program who assisted with funding for equipment and Catherine Hutchinson (Instructional Support Technician), Daniel Martinez (Web Supervisor) and Eric Newton (CI student) without whom I could not have launched the CI Birds website. My thanks also go to Cindy Wyels (Math Faculty) and Rachel Cartwright (Biology Faculty) for advice and encouragement.