

Practicum Report
MS Environmental Policy and Management

Student name: [REDACTED]

Expected graduation: June 2019

Partnering Organization (PO): Environmental Defense Fund (EDF)

Location: Sacramento, CA

Position: Habitat Intern

PO Supervisor: Eric Holst (EDF; Associate Vice President, Working Lands)

Practicum Supervisor: Mark Schwartz (UC Davis)

Timing: June 25, 2018 – September 28, 2018, ~35 hours/week. Internship will continue part time through Fall 2018 quarter.

Credit: UC Davis ENV 296 Practicum Units (6) will be all be enrolled in for Fall 2018

Report:

A. Differences between Practicum Proposal and actual Practicum:

The Practicum Proposal outlined three projects to be completed as an intern at EDF: (1) *CA State Board of Food and Agriculture meeting* (2) *Whole Farm Plan* and (3) *Monarch and Pollinator Conservation*. The actual Practicum did not involve projects (1) and (2) due to a change in the needs of the PO Supervisor. Project (3) was the main focus of the Practicum; project tasks are described in Part B below.

While projects (1) and (2) were not completed as part of the Practicum, several of the analytical skills and approaches that would have been required for those projects, were learned and/or practiced during the Practicum. These include: critical reading and literature reviews, interviews with experts (i.e. scientific, practical), grower and farm manager outreach, and engagement with other environmental professionals.

Please note:

While the practicum took place over the summer, I will be continuing with EDF as an intern part-time at least through the Fall. I will continue assisting with the needs of EDF's "Habitat Team," which will include a literature review and analysis of the scientific uncertainty surrounding the

western population of the monarch butterfly, and any subsequent follow-up which may include organizing a workshop of monarch experts.

Additionally, because I was unable to complete project (2) (Whole Farm Plan) during the summer Practicum, I will be conducting an independent study as part of my Fall quarter coursework, where I will conduct part, or all, of the Whole Farm Plan project as described in the Practicum Proposal. Please note, while the PO Supervisor (Eric Holst) will act as one of the advisors to my Whole Farm Plan project work, this is not an EDF project.

B. Deliverables Produced and Tasks Completed

Projects Background: The current focus of the “Habitat Team” at EDF is on monarch butterfly conservation, specifically on working lands. Given significant declines in North American monarch butterfly populations and the vast amount of agricultural land in California, there is a significant opportunity to restore and enhance habitat in historical monarch breeding ranges and migratory routes in some of California’s vast agricultural regions. Agricultural involvement is well suited for monarch conservation because not only are growers important stewards of the land and the habitat it provides, but monarch habitat can also provide benefits for agricultural production (e.g. habitat for beneficial insects, including pollinators, healthy soils, etc.).

Deliverable (1) Technical Guide (“Monarch Butterfly Habitat Creation in California: A Technical Field Guide”), Co-Author:

Part of EDF’s monarch program involves providing resources with technical assistance and guidance. I was responsible for creating a technical field guide to provide growers and farm managers with step by step instructions on creating habitat on working lands (i.e. farms and ranches). This involved extensive online research to determine best practices. I identified, scheduled meetings with, and met with (in person and via phone) about 10 scientists and three practitioners who have experience with monarch butterflies and ecological restoration. I coordinated and attended two site visits to commercial-scale farms to meet with growers and farm managers who had attempted creating monarch butterfly habitat, in order to better understand grower needs and inform my technical guide. The final deliverable is 25 pages and includes information ranging from site preparation, recommended seed mixes and sources, and site maintenance. This deliverable will be published on EDF’s website and widely distributed to farms, ranches, and grower organizations and associations.

Note: I co-authored this technical guide with EDF’s contract ecologist, Dr. Jaymee Marty.

Deliverable (2) Opportunities on Orchards and Vineyards and (3) Post-Fire Opportunities:

I conducted online research and outreach to determine opportunities for EDF’s monarch butterfly program to engage with growers, grower associations, and government agencies to support monarch habitat creation. To determine whether there are opportunities to plant

monarch habitat on orchards during crop regeneration (when trees are pre-productive), I conducted research and outreach with crop and farm advisors, farm managers, and scientists. Through online research I identified grower organizations that would be potentially compatible with EDF's mission, and scheduled meetings and met with (via phone) a number of representatives to discuss opportunities for monarch habitat on vineyards. I presented information on EDF's program and through my conversations, identified a number of potential partnerships and opportunities, such as workshop presentations to engage growers, and conducting experimental planting on demonstration vineyards. I presented these potential partnerships and opportunities to my colleagues at EDF to move forward with. To identify potential opportunities for monarch habitat on post-fire landscapes and partnerships with government agencies, I identified and met with (in person and via phone) eight representatives from the Bureau of Land Management (BLM), US Forest Service (USFS), and California Department of Forestry and Fire Protection (CALFIRE). I presented my findings to my colleagues at EDF, including potential partnership with USFS and supporting native milkweed and forb plantings with BLM. My colleagues at EDF will take the information I presented to them and follow through on potential opportunities for partnerships and engagement with various grower organizations and government agencies.

Deliverable (4) Analysis of Current Government Programs that Support the Monarch Butterfly:

I conducted extensive online research on US Department of Agriculture (USDA)'s Environmental Quality Incentives Program (EQIP) and Conservation Reserve Program (CRP). My report on these programs included the current state of the program, gaps and barriers to supporting greater quantities of habitat creation, and how EDF's monarch butterfly program can fill in those gaps and overcome barriers. I presented these findings with the Habitat Team at a 2-day planning meeting (see (6) other Tasks). The findings from my research were integrated into EDF's "Habitat Team 2018-2019 Work Plan."

Deliverable (5) Relevant Research:

I conducted research on a variety of topics as needed by EDF staff from different EDF offices (i.e. Texas, San Francisco, China, Colorado). My research on prairie restoration included reading two books and extensive online research. I gave a summary report to my PO Supervisor in an attempt to translate and apply midwestern prairie knowledge to California, where "prairie" restoration is not well documented or studied. Other research included understanding the current state of monarchs in Texas and the green peafowl, an endangered species facing conflict with farmers in China.

(6) Other Tasks

I actively participated in a Habitat Team two-day meeting, where members of EDF's habitat team (from EDF offices around the country) and consultants gathered to discuss the work plan for the coming year, which included program objectives and goals, how to address scientific uncertainty surrounding the monarch butterfly, and potential opportunities to grow our

program. We also discussed how to guide spending of the \$3 million that have been approved in a recent bill for the Wildlife Conservation Board to support monarch butterfly conservation. I presented information on grower feedback from my site visits and big picture thinking about the program.

C. Career Objectives

This Practicum furthered my career objectives by providing experience in promoting environmental protection within the agricultural industry. These projects contributed to my career goals by giving me experience in how environmental challenges are approached from the non-profit sector, and how cross-sector relationships (i.e. between non-profits, government, private organizations, and industry) can be utilized to improve effectiveness of environmental efforts. Through outreach to other conservation organizations, and grower associations and organizations, I was able to build my network of people who work at, or are interested in, the intersection of environmental protection/conservation and agricultural production. Through site visits and communications with growers, and through development of the technical field guide, I furthered my knowledge of sustainable agricultural practices, as well as the realities of the agricultural industry. Additionally, I gained skills in communicating and interacting with, presenting information to, and writing for an audience of growers and farm managers. I gained leadership skills from presenting information to my colleagues at EDF, and through representing EDF when reaching out to various government agencies, NGOs, and grower groups. The majority of projects contributed to my research, analysis and critical thinking skills, as well as enhanced my skills in policy analysis.

My continued work in addressing scientific uncertainty for the western monarch butterfly population and the Whole Farm Plan project, will continue to enhance my skills in economic policy analysis, research analysis, balancing environmental and human values/objectives, as well as farmer/rancher engagement.

Approval: This Practicum Report has been received and approved by the Practicum Supervisor (Mark Schwartz) on 22 October.

Final Review: This Practicum Report will be reviewed and approved by the Comprehensive Exam Committee (CEC).