

2018 ANROSP Program Awards Nomination for Program Evaluation Award UC California Naturalist Program

This nomination is submitted for the UC California Naturalist Program for their work developing a comprehensive program evaluation and performance management system. The nomination outlines the key elements of the system and how it contributes to monitoring, analyzing, communicating and improving program effectiveness.

Summary

Program evaluation for the UC California Naturalist program has evolved over the last five years and matured into a comprehensive and functional system that provides the CalNat program team with useful information for assessing performance, setting priorities, refining practices, and allocating resources. All of the practices described below (with the exception of the 5 Year Program Review and the Needs Assessment) are conducted annually allowing for comparisons from year to year (See Appendix 1 for a few of the Program Metrics recorded annually). Each practice includes a separate data collection instrument to evaluate the instructors, courses, and volunteer service effort and process for reporting integration into planning and operations. The evaluation process for each instrument is described in detail below. The final section outlines how the CalNat evaluation system may serve as a model for other ANROSP programs.

The core elements of the program evaluation system fall into four buckets: 1) **Data Collection** including needs assessment, post course evaluation, and site audit survey; 2) **Data Analysis, Reporting and Communication** including a course evaluation report, a partner scorecard, and a site audit summary; 3) **Planning and Adaptive Management** including an annual plan, strategic plan, and business plan; and 4) **Integration into Operations** including revising standard operating procedures, and business process improvements. These elements together



Figure 1: California Naturalist Evaluation and Performance Management System

(see figure 1) serve as the foundation for the current program evaluation and performance management system for the CalNat program.

Data Collection

Course evaluation: Post-course survey.

We received a NSF grant to help develop the evaluation methods currently used by the program. Originally, we started with a pre and post course survey which was ideal for our research objectives. However, we had to move to a retrospective pre

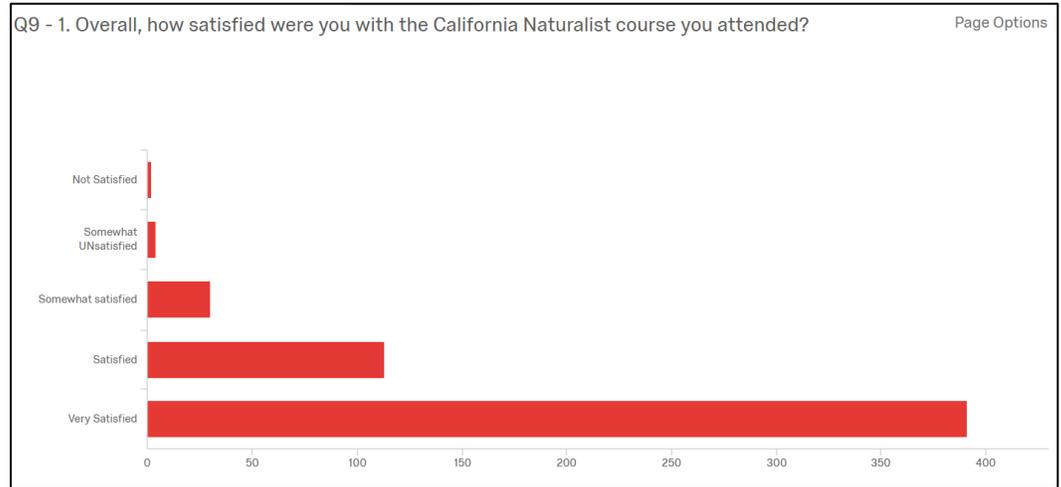


Figure 2: Course Evaluation

post survey because our return rates on the earlier post-survey were very low demonstrating an unwillingness by the participants to fill in two course surveys. Given the importance of collecting post-course data on the experience we now have one retrospective pre post survey. The survey includes an overall satisfaction ranking, instructor and guest speaker evaluation, and relative importance of various course elements; as well as information about the participant (demographics). To measure changes in skills, science identity, and environmental efficacy we use the DEVISE protocol -- developing, validating, and implementing standardized evaluation instruments developed from a comprehensive evaluation of citizen science project participants (Phillips et al. 2014; Bonney et al. 2016). The questions measure individual learning outcomes as a result of project participation and rely on a 9-point Likert scale. We also ask 10 ecological knowledge questions about information covered in the curriculum, such as geological and watershed processes, California’s climate, the Linnaean system of classification, parts of a plant, and changes expected due to climate change, to measure differences in knowledge before and after the course.

Site Audit Visits: Quality assurance, quality control. We attempt to visit all of our courses at least once during the first year they are offered and then put them on a visiting rotation of one visit per three years. We recently developed a site audit survey that is now being used by the California Naturalist program team members as part of its quality control efforts. The survey standardizes the criteria established for the successful course administration by instructors.

Interviews: Barriers/Opportunities for young adults. We have conducted over 25 interviews with young adults who have participated in California Naturalist to gain insights on the influence of the program as well as interest in and barriers to participating in citizen science. Long-term follow up while ideal to determine how this program influences these individuals’ futures has proven to be difficult due in part to the changes in location and context that people undergo in their 20’s.

Volunteer Management System (VMS): Behavioral impacts. We offer incentives to the naturalists (annual pins) and encourage them to log their volunteer hours on the UC ANR volunteer management system. The data from this system provides evaluation of the type and extent of the impacts that the volunteers are having on local communities and California’s ecosystems. While this data comes from a subsample of naturalists it is critical to evaluate collective impact. In addition to capturing volunteer hours, it also documents the category of volunteer service. In 2017, we added a mechanism to capture area impact arising from some of the more common types conservation and restoration efforts including removing invasive species, restoration or rehabilitation efforts, and local cleanups.

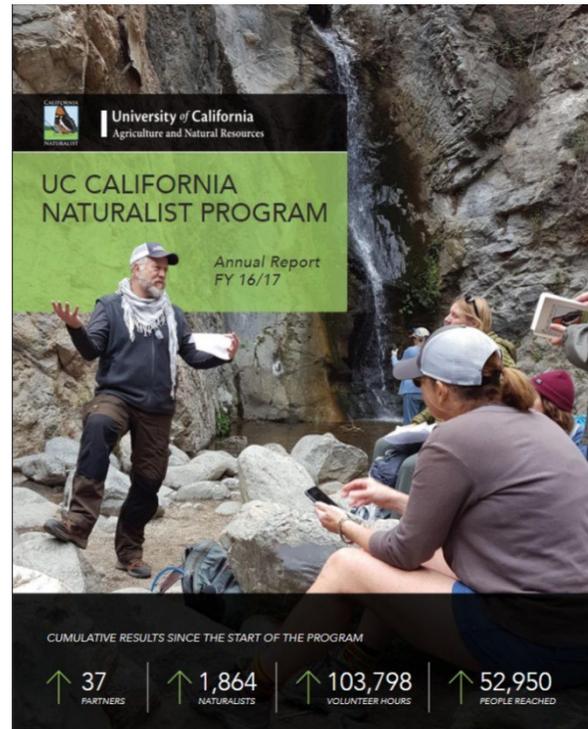


Figure 3: Annual Report

Analysis, Reporting and Communication

Annual Report. The new Annual Report provides a summary of the program’s core performance measures for the fiscal year, highlights special accomplishments, features naturalist and partner stories, explains the program’s unique delivery model and presents a picture of key financial indicators.

Partner Scorecard. In addition to the summary of the end of course evaluations, the CalNat program initiated a snapshot of the partner’s key performance for the year in the form of a one page Partner Scorecard. Designed for partner leadership the key performance measures in the Scorecard are benchmarked against the average score for all partner organizations for the previous year.

Planning and Adaptive Management

Strategic Plan. Completed in 2017, the program’s first strategic plan outlines the programs six strategic objectives for the next five years and goals for each one. The strategic plan was informed by the needs assessments of three clientele groups (partner leadership, instructors, and naturalists) and strategic planning exercises conducted by the program team members initiated in 2016.

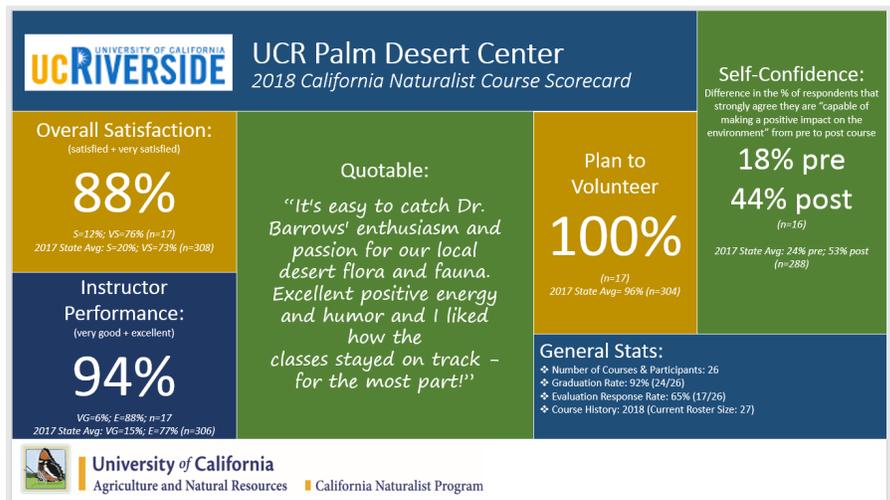


Figure 4: Partner Scorecard

Annual Plan. The program’s annual plan is presented as a Gantt chart highlighting key tasks and events providing a twelve month timeline in two week intervals. The annual plan and the targets associated with it are informed by core program monitoring indicators

Business Plan. Beginning in 2017, the program prepared its first business plan (updated in 2018) to outline its strategy to reduce its reliance on central funding and increase the portion of program funds coming from program generated revenue, grants, contracts, and donations.

Integration into Operation

The ultimate goal of program evaluation is improving program performance and effectiveness. Lessons learned from evaluation are integrated into plans and operationalized through standard operating procedures and business process improvements.

Instructors Manual (SOPs). The California Naturalist Instructors Manual serves as the repository of the programs standard operating procedures and is updated regularly based on new information and needs.

Business Process Improvements. Everything from software upgrades to workflow modifications and changes in roles and responsibilities are examples of how lessons generated from program evaluation can inform and improve program operations.

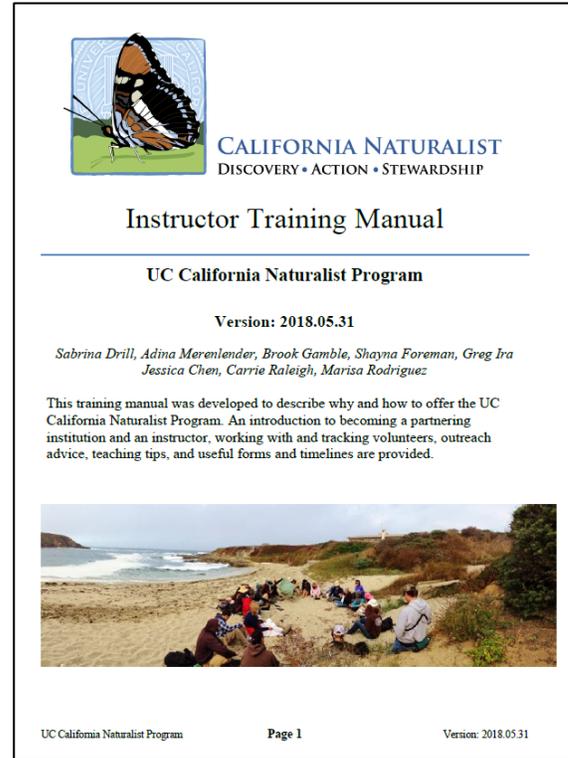


Figure 5: Instructor Training Manual (Program SOPs)

Research Projects and Publications

In addition to the established systems described above, special research projects and publications often arise and result in additional data collection and analysis which contribute to specific program evaluation.

Conservation Biology Publication. One example of a publication that involved analysis of existing program data supplemented by additional interviews was the publication by Merenlender, A. M., Crall, A. W., Drill, S., Prysby, M. and Ballard, H. entitled “Evaluating environmental education, citizen science, and stewardship through naturalist programs.” Published in Conservation Biology in April 2016. This publication presented research results from



Figure 6: Recent Publications

research conducted during the initial years of the program using the initial set of evaluation strands developed by the DEVISE project (Developing, Validating, and Implementing Situated Evaluation Instruments) which consists of “a set of constructs and associated instruments to measure outcomes such as interest, motivation, self-efficacy, and skills.” Which were adopted by the California Naturalist program.

Climate Stories. One recent addition to the program’s evaluation efforts involves capturing qualitative stories from our naturalists and partners. These stories provide a more detailed look at the impact of the California Naturalist program on the course participants and helps paint a more complete picture of the program’s impact.

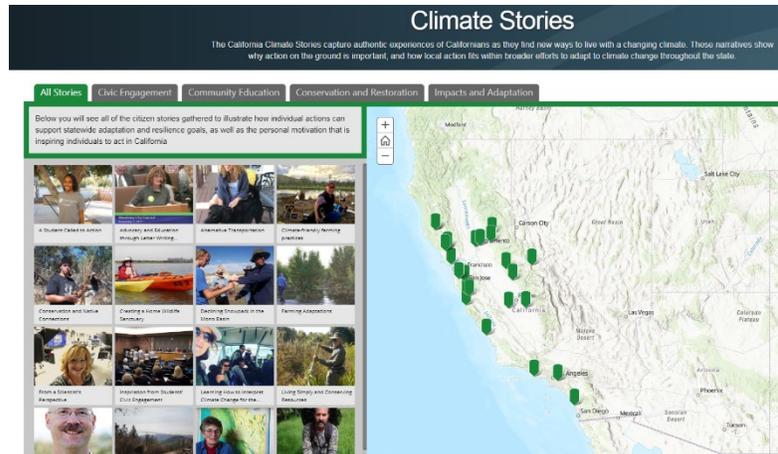


Figure 7: Naturalist Stories

Potential Value as a Model for Other ANROSP Member Organizations.

Over its first five years, the UC California Naturalist program has built a comprehensive program evaluation and performance management system that connects data collection, analysis, and reporting and translates the information into improvements in program priorities, resource allocation, and operations. Many of the elements of this system can be replicated by other ANROSP member programs. A few specific examples are provided below.

- **Course Evaluation.** The end of course evaluation completed by CalNat course participants is built from a Qualtrics survey and includes sections on participant expectations, participant satisfaction, demographics, and a post-then-pre section to measure outcomes related to self-efficacy, and skills.
- **Site Audit Survey.** The site audit survey is primarily a quality control check on program delivery with special emphasis on the instructor. We also use a Qualtrics Survey for this purpose, but the survey is completed by one of our team members during a site visit conducted in the first year and at least once every three years thereafter.
- **Volunteer Management System.** Our Volunteer Portal is an in-house product that allows us to capture volunteer service of California Naturalists. This product is available at a considerable discount compared to off-the-shelf Volunteer Management System products. A recent upgrade makes adding participants and reporting more streamlined.
- **Annual Report.** Probably more than any other component of the CalNat program evaluation system, our Annual Report might best serve as a model for other programs. It seeks to focus on the most basic elements of the program, which should be included in any such report: Who we are; What our objectives are; How we operate; What our course outputs are; Where we work; Who our partners are; What our outcomes are; and Where our funds come from. While every

program will have a unique set of program metrics, establishing a set of shared performance measures across all Naturalist programs would go a long way in helping to aggregate the outcomes of these programs at a national level and demonstrate their growing impact and value to the public.

Appendix 1: Program Metrics Measured Annually

Table 1: Program Metrics (outputs)

Performance Measure	Annual By Fiscal Year						
	<-FY11/12	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
CAT							
PART Partners (Total, Active, New)	<-FY11/12	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
Total # of Program Partners Established LTD (Active, Conve	4	8	14	24	33	38	49
# of Program Partners Active LTD (Active)	4	8	14	24	32	37	43
# of New Program Partners YTD	4	4	6	10	8	5	11
# of Active Program Partners (meeting ANR partnerships)							
COURSES	<-FY11/12	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
Courses Conducted YTD	6	12	18	24	30	34	41
FTE	<-FY11/12	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
Community Education Specialists	1	1	1	1.5	1.5	2	3
Courses Per CES	6	12	18	16	20	17	14
PARTICIPANTS	<-FY11/12	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
# of Participants Trained YTD (All Achievement Levels)	154	206	272	402	496	759	799
# of Naturalists Certified YTD	92	196	246	359	413	496	462
# of Participants Trained LTD	280	377	649	1051	1547	2307	3,216
# of Naturalists LTD							2,490
Federal Fiscal Year (10/1 - 9/30) Chris Hanson in May					664	818	
INST	<-FY11/12	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
Instructors (Workshops Conducted, Instructors Trained)							
# of New Instructors Trained YTD	1	1	80	29	27	38	32
# of Instructor Workshops			3	1	2	3	2
# of Active Instructors (Needs operational definition)							
VOLUNTEER HOURS	<-FY11/12	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
# of Naturlist Recording Volunteer Hours YTD	38	124	194	335	495	577	618
# of Volunteer Hours Recorded YTD	761	789	11,523	21,067	31,090	35,506	33,394
# of Volunteers Recording 40 hrs or more YTD							256
# of Naturlist Recording Volunteer Hours LTD							1,385
# of Volunteer Hours Recorded LTD							141,770
Value of Volunteer Service YTD	\$18,835	\$20,522	\$303,516	\$566,070	\$857,773	\$1,010,501	
Value of Volunteer Service LTD	\$18,835	\$39,357	\$342,872	\$908,943	\$1,766,716	\$2,777,217	
CATEGORY OF VOL SERVICE	<-FY11/12	FY12/13	FY13/14	FY14/15	FY15/16	FY16/17	FY17/18
# of Volunteer Hrs in None YTD	28	63	1,893	2,622	657	1,040	308
# of Volunteer Hrs in Interpretation/Education YTD	193	1,947	2,937	5,115	10,420	11,093	
# of Volunteer Hrs in Conservation/Restoration YTD	254	896	1,357	3,450	5,257	6,508	5,766
# of Volunteer Hrs in Citizen Science YTD	184	1,197	2,668	4,751	6,259	5,975	6,089
# of Volunteer Hrs in Program Support YTD	131	1,460	2,668	5,130	8,496	10,891	10,326
# of Volunteer hrs in None LTD	28	90	1,983	4,605	5,262	6,302	
# of Volunteer Hrs in Interpretation/Education LTD	193	2,140	5,077	10,193	20,613	31,705	
# of Volunteer Hrs in Conservation/Restoration LTD	254	1,150	2,507	5,956	11,213	17,721	
# of Volunteer Hrs in Citizen Science LTD	184	1,381	4,049	8,800	15,060	21,034	
# of Volunteer Hrs in Program Support LTD	131	1,591	4,259	9,389	17,885	28,777	
% of Volunteer Hrs in None YTD	3%	1%	16%	12%	2%	3%	
% of Volunteer Hrs in Interpretation/Education YTD	24%	35%	25%	24%	34%	31%	
% of Volunteer Hrs in Conservation/Restoration YTD	32%	16%	12%	16%	17%	18%	
% of Volunteer Hrs in Citizen Science YTD	23%	22%	23%	23%	20%	17%	
% of Volunteer Hrs in Program Support YTD	17%	26%	23%	24%	27%	31%	

Table 2: Selected Program Outcomes

Summary of Program Outcomes:

Selected items related to Satisfaction, Self Efficacy and Content Knowledge (Source: CalNat End of Course Evaluation Results 2015-2017)

Item	Specific Response Category	2015	2016	2017
Q9 - 1. Overall, how satisfied were you with the California Naturalist course you attended?	Very Satisfied + Satisfied	92%	94%	94%
Q17 - 6. As a California Naturalist, do you plan to volunteer in the coming year?	Yes	96%	98%	96%
Q20 - 7. How would you rate the performance of your lead instructor?	Excellent + Good	94%	94%	92%
Q26 - POST: Please indicate how much you DISAGREE or AGREE with, I am capable of making a positive impact on the environment	Storngly Agree + Agree	78%	97%	96%
Q34 - PRE: Please indicate how much you DISAGREE or AGREE with, I am capable of making a positive impact on the environment.	Storngly Agree + Agree	43%	82%	77%
Q28 - POST: Please indicate how much you DISAGREE or AGREE with each of the following statements. I feel confident in my ability to explain science topics to others.	Storngly Agree + Agree	51%	77%	75%
Q35 - PRE: Please indicate how much you DISAGREE or AGREE with each of the following statements. I feel confident in my ability to explain science topics to others.	Storngly Agree + Agree	36%	59%	55%
Q31 - POST: "I currently have the skills necessary to..." Follow instructions or protocols for citizen science projects	Storngly Agree + Agree	67%	94%	92%
Q37 - PRE: "Before taking the California Naturalist course I had the skills necessary to..." Follow instructions or protocols for citizen science projects	Storngly Agree + Agree	36%	52%	50%
Q32 - POST: "I currently have the skills necessary for..." Educating others about your local ecology	Storngly Agree + Agree	64%	89%	89%
Q38 - PRE: "Before taking the California Naturalist course I had the skills necessary for..." Educating others about your local ecology	Storngly Agree + Agree	29%	45%	44%
Number of content questions (out of 10) answered correctly by 70% or more of the respondents		7	8	8