Clear Lake Project Evaluation Report
Phase 1: 2018-2022 and Phase 2: 2022-2024
Vikram Koundinya & Khadijah Abdulmateen

Introduction

This report covers the accomplishments of the Socio Economic Team led by the Center for Regional Change (CRC) at University of California Davis (UCD) (referred to as CRC from hereon) during Phase 1 of the project from 2018-2022 and the outcomes of the environmental education pilot training program led by CRC and UCD Center for Community and Citizen Science during Phase 2 of the project from 2022-2024. This evaluation was carried out by Evaluation Specialist Vikram Koundinya and CRC undergraduate student researcher Khadijah Abdulmateen.

Evaluation methods used in Phase 1 of the project included evaluator observations from attending the monthly CRC meetings and quarterly Clear Lake Blue Ribbon Committee (BRC) meetings and interviews with CRC Socio Economic team members and Clear Lake stakeholders that served on the BRC. Evaluation methods during Phase 2 of the project included evaluator observations from attending the CRC project monthly meetings, observation of the pilot environmental education training, and an end-of-training evaluation survey of the pilot.

The evaluation specialist and the undergraduate student researcher conducted the interviews while the undergraduate student researcher recorded the interviews and took notes. Interview data were analyzed by the evaluation specialist and the undergraduate student researcher separately and later compared for consistency of findings. The evaluation specialist serves as a faculty member in the Department of Human Ecology at UCD and has extensive experience in conducting interviews, analyzing interview data, developing Observation Guides and surveys, and collecting and analyzing data using all these data collection methods. The undergraduate student researcher is new to qualitative data analysis and evaluation, and received training from the evaluation specialist after getting hired for this project.

Methods

For Phase 1 evaluation, zoom interviews were conducted with six CRC Socio Economic team members and two Clear Lake BRC members. The interviews lasted from 10 to 31 minutes. The CRC participants were asked six questions focused on their involvement with the project, their accomplishments related to their goals and outcomes from the project, and team functioning. The BRC participants were asked five questions that focused on their involvement with the project, their understanding of the goals of the CRC Socio Economic team, and any barriers they had in working with the CRC Socio Economic team. Schedules used for these interviews are provided as Appendix 1.

For Phase 2 evaluation, an Observation Guide and end-of-training survey were developed by the evaluation specialist in consultation with the CRC Socio Economic team members. The evaluation specialist and the undergraduate student researcher attended the training, observed the event, and collected observational and survey data. They administered a Qualtrics survey at the end of the training. The Observation Guide and survey are provided as Appendix 2 and 3.

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Results

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Phase 1 (2018-2022)

The interview questions tried to answer the big picture evaluative question: "How do the different UC Davis socio-economic team members and community and economic development stakeholders of the Clear Lake Region perceive the goal(s) and intended outcomes of Phase 1 of the Clear Lake Project?"

The results are organized by three areas: (1) role of the interview participants in the project, (2) accomplishment of research outcomes, and (3) successes achieved and challenges faced.

Participants' Role in the Project:

Roles differed widely among the interview participants. The socio economic team members were involved in planning, execution, and coordination of the project activities. Most of them expressed that their scope of work and goals were unclear at the beginning, which became somewhat streamlined as the project progressed. The two participants from the BRC indicated their role to be more of coordination between the CRC socio-economic team and the BRC and voting on priority areas for funding. When asked what they perceived to be the overall goal of the socio economic team, most of the participants shared that it was to conduct research to develop a socio-economic snapshot of the Lake County and Clear Lake region, develop economic development opportunities for the local people, and make recommendations to the BRC for implementation. This appears to be in line with the goals identified in the project visioning document:

> CRC objectives are to inform social and economic decision-making activities, by conducting applied research to guide the Blue Ribbon Committee in improving outcomes for the communities surrounding Clear Lake in Lake County. The CRC will focus on developing a baseline socio-economic analysis of the region, and community and tribal engagement around strategies to improve community vitality. (Retrieved from UC Davis CRC Clear Lake Project Website on 10/1/2024).

Accomplishment of Research Outcomes:

All of the CRC socio economic team participants shared that they had to adjust their originally envisioned research outcomes as the scope and charge of work for the team became more clear. They shared that they had to realign their research strategies. The PI working on the

socio-economic profile didn't know that there was similar work already done by an economics professor at Sonoma State University. Once that was available, this PI had to realign some of their work. The tribal engagement team also had to realign their strategies because of dynamics with the tribal partners in Clear Lake and also due to COVID lockdown that made any in-person meeting or data collection activity unavailable. However, after realigning their research strategies and expected outcomes, the team members felt that they were able to deliver products that met the needs of the BRC. The two BRC participants expressed satisfaction with the products developed by the CRC socio-economic team, however, they shared that there are too many websites where the reports are housed and they don't know where to find a particular report.

Successes Achieved and Challenges Faced:
All eight interview participants expressed that they felt like they worked on a project that had a lofty goal of creating culturally relevant economic development opportunities for the local people of Clear Lake and Lake County. They were all also satisfied with the types of research and outreach products they were able to create for the Clear Lake stakeholders. All these products can be found on UC Davis Clear Lake project website. However, there were some significant challenges expressed by the socio-economic team members.

One of the participants said "while the spirit and intent of the project were needs-based, there was a mismatch of our ability to satisfactorily achieve all of the project goals". Another participant expressed that "we realized we needed to invest lot more time and energy to do more thoughtful and culturally competent research and outreach with the community. We can't just come in and have stakeholder meetings….". Two other participants said part of the issue was that "there is no funding to do the needed pre-work to understand the existing culture and have preparatory meetings with tribal stakeholders" and "no one in the team had any experience actually living or working in rural communities to address these type of issues. There could have been insensitivity to what the issue was in the first place." More than one-half of the socio-economic team members shared that they felt like "uninvited guests in the community".

The other challenges included:
- Sabbaticals and the drop out of a couple of team members made things difficult.
- The dropping out of the Economic Development PI left the student stranded who was very interested in that part of the work.
- Some of the elements of the sub teams' work had a siloed approach. Two interview participants shared that more integrated and collaborative work among the three sub teams could have led to even better outcomes.

The BRC identified environmental education as a priority area for the Phase 2 of the project for the CRC socio economic team to focus on.

Phase 2 (2022-2024)

Observation Results:
Overall, the observations of the evaluation specialist and the undergraduate researcher were in line with each other and included:
- The educational materials developed for Clear Lake appeared age appropriate for youth and were easily accessible.
- The participants appeared actively engaged in the training activities. The participants that attended the first day field visit appeared more engaged on Day 2.
- The pilot educational materials appeared to be usable as it relates to learnability, satisfaction and absence of any errors.
- There was a lot of discussion about the iNaturalist activity.
- The training space and environment appeared conducive for learning.
- Digging into data activity had an energy drop and participation levels slightly dropped. This may be because it was a slightly difficult activity. A majority of the participants found it hard to navigate the iNaturalist website. A few people appeared completely lost. One of the participants shared with the evaluator "how will the kids use iNaturalist if phones are not allowed in the classroom"?
- Honoring Our Oaks session had very active participation.

End-of-Training Survey Results:
Thirteen participants completed the survey. The main findings included:

- A majority (54%) of the 13 participants indicated that the training met their environmental education needs fully, whereas, 31% indicated that it met their needs to a good extent and 15% indicated their needs being met to some extent.
- 75% to 91% of the respondents agreed that the shared educational materials are relevant to their educational setting, age appropriate for Grades 3-5, reflect Clear Lake Tribes' ecological knowledge, incorporate tribal materials, reflect community-based organizations' knowledge, and incorporate community-based organizations' materials. However, 4 of the 13 respondents (33%) were neutral to disagree in their response about the educational materials reflecting tribes' ecological knowledge.
- More than 75% of the respondents indicated having greater confidence in how to engage youth in place-based environmental literacy, greater understanding of how to engage youth in participatory science, and greater connection to science projects taking place in the Clear Lake region after attending the training. However, there were still five respondents who were not very confident in how to engage youth in participatory science.
- All but one of the 13 respondents feel that the training supports regional environmental education capacity building in the Clear Lake region.

- The respondents indicated that the modules being youth user friendly and interactive and the fact that tribal input was a foundation to this training and curriculum were the most valuable parts of the training.
- Areas of suggestion for the training included more space for hands on activities, more talk about tribes, and more explanation about iNaturalist.
- All but one respondents indicated that the training provided them with the tools to engage in education programming with youth.
- The respondents expressed need for funding a group of training for regions around the lake, having a dedicated hub for check out materials, having a network of educators and local partners, educational presentations in schools and communities, and on-going support as the possible next steps to further increase capacity for envriomental education in the Clear Lake region.
- Training participants shared a number of potential hosts to manage the educational materials for a long term. A list of names can be found in the training evaluation summary report (Appendix 4).

Evaluation Recommendations

The following recommendations are made based on the evaluation results from the two phases of the project:

- To the extent possible and practicable, spend more time understanding the community situation and needs before developing the scope of work. Use multiple and mixed methods to collect needs data from multiple stakeholders.

- Adopt a participatory and culturally responsive approach to program development and evaluation. Participatory, utilization focused and developmental evaluation approaches and frameworks may fit well for such complex projects where there are multiple local community stakeholders with competing priorities and preferences.

- Consider using a program planning tool like a program logic model or some other framework that can help with all sub teams being on the same page on what the expected outputs and outcomes from them and the project are.

- Have a plan to keep track of the use of the environmental education materials developed for the nonformal youth educators in the Clear Lake region. The survey results were overwhelmingly positive, which is a good opportunity to keep the collaboration going.

Appendix 1
Phase 1 Interview Schedule

Evaluative Question: How do the different UC Davis socio-economic team members and community and economic development stakeholders of the Clear Lake Region perceive the goal(s) and intended outcomes of Phase 1 of the clear lake project?

Interview Questions for UCD faculty:
1. Please describe your involvement with the Phase 1 of the project. [Prompts: what research and outreach activities were you involved in? How frequently did you meet with the team members (monthly meetings?)]

2. What is your understanding of the goals of the socio-economic team/component of Phase 1 of the project?

3. Did you realign your research strategies to align with Phase 1 goal? If you did, what adjustments did you make?

4. Were you able to accomplish your research outcomes? If not, what factors prevented you from achieving that?

5. Were there any interdependencies with other team members to accomplish your research outcomes? If yes, did you get what you wanted from them? If not, what were the barriers or challenges?

6. Do you have other comments to share that could help me with designing the evaluation plan for the socio-economic component of Phase 2?

Interview Questions for Clear Lake Stakeholders:
1. Please describe your involvement with the Phase 1 of the project.

2. What is your understanding of the goals of the socio-economic team/component of Phase 1 of the project?

3. To what extent were the accomplishments of UC Davis socio-economic team meet this goal?

4. Did you have any barriers related to working with the UC Davis socio-economic team in this project? If yes, what kind of barriers did you experience and what solutions do you propose to overcome such barriers?

5. Do you have other comments to share that could help me with designing the evaluation plan for the socio-economic component of Phase 2?

Appendix 2
Phase 2 Environmental Education Pilot Training Program Observation Guide

Observation Prompts	Actions You See or Comments You Hear
1. Do the educational materials developed for Clear Lake reflect the region well (e.g.: culturally appropriate, age appropriate, learner-centered etc.)	
2. Do the educational materials appear usable? [Usability attributes include learnability, efficiency, memorability, errors, and satisfaction (Nielsen, 2010)]	
3. Is the feedback from participants used in making changes as needed to the educational materials?	
4. Are participants actively engaging in the field visit and training? (example cues: participants asking questions, participants discussing the educational materials among themselves, providing feedback when requested or even when not requested, etc.)	
5. Any other things that stand out to the observer?	

Nielsen, J. 2009. What is usability? In User Experience Re-Mastered: Your Guide to Getting the Right Design, 1-22.

Appendix 3
Phase 2 Environmental Education Pilot Training Evaluation Survey

Clear Lake Participatory Environmental Education Science Training Evaluation

The purpose of this evaluation is to improve our team's environmental education materials for the Clear Lake region. The participation in this evaluation is voluntary, but will greatly help us improve the materials for the benefit of the Clear Lake communities. For any questions about this survey, please contact Sarah Angulo at sangulo@ucdavis.edu.

1. To what extent did the training today meet your environmental education needs?

- Did not meet my needs - To some extent   - To a good extent   - To the full extent

2. To what extent do you disagree or agree with the following statements related to educational materials shared in the training:

	Strongly Disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree
The shared educational materials are relevant to my educational setting					
The educational materials are age appropriate for Grades 3-5					
The educational materials effectively reflect Clear Lake Tribes' ecological knowledge					
The educational materials effectively incorporate Tribal materials (resources, data, projects, etc.)					
The educational materials effectively reflect community-based organizations' knowledge					
The educational materials adequately incorporate community-based organizations' materials (resources, data, projects, etc.)					

3. To what extent do you agree or disagree with the following statements related to learning and behavioral outcomes of the training:

	Strongly Disagree	Disagree	Neither disagree nor agree	Agree	Strongly Agree

I have greater confidence in how to engage youth in place-based environmental literacy.				
I have a greater understanding of how to engage youth in participatory science.				
I have greater confidence in how to engage youth in participatory science.				
The training provided me with a feeling of having a greater connection to science projects taking place in the Clear Lake region				

4. To what extent does this training support regional environmental education capacity building in the Clear Lake region?

- Does not support capacity building   - To some extent   - To a good extent - To the full extent

5. What parts of the training were most valuable to you and why? _____

6.What parts of the training could be improved and how? _____

7. To what extent did this training provide you with tools to engage in educational programming with youth?

- Did not provide tools that I can use   - To some extent - To a good extent - To the full extent

8. What next steps would you like to see from our team to further increase capacity for environmental education in the Clear Lake region? _____

IMPLEMENTATION OF PROJECT MATERIALS IN YOUR EDUCATIONAL PROGRAMS

9. Do you plan to pilot the project materials in your educational setting in April-May.

   -   Yes   - No (why not): _____

10. What other support would you need to be able to implement these materials in your educational setting?_____

11. "At the conclusion of our project, we plan to hand these materials over to an entity that can host and manage them long term. What suggestions, if any, do you have for organizations or agencies or Tribes that can host and manage these materials long term?
_____

12. Please provide any additional comments or suggestions you have related to improving environmental education programs in the Clear Lake region. _____

Appendix 4
Pilot Training Evaluation Summary Report

Q1 - To what extent did the training today meet your environmental education needs?

Answer	Percentage	Frequency
Did not meet my needs	0.00%	0
To some extent	15.38%	2
To a good extent	30.77%	4
To the full extent	53.85%	7
Total	100%	13

Q2 - To what extent do you disagree or agree with the following statements related to educational materials shared in the training:

Question	Strongly Disagree		Disagree		Neither agree nor disagree		Agree		Strongly agree		Total
The shared educational materials are relevant to my educational setting.	7.69%	1	7.69%	1	0.00%	0	53.85%	7	30.77%	4	13
The educational materials are age appropriate for Grades 3-5.	8.33%	1	0.00%	0	8.33%	1	50.00%	6	33.33%	4	12
The educational materials effectively reflect Clear Lake Tribes'	8.33%	1	0.00%	0	25.00%	3	16.67%	2	50.00%	6	12

ecological knowledge.										
The education materials effectively incorporate Tribal materials (resources, data, projects, etc.).	0.00%	0	0.00%	0	25.00%	3	16.67%	2	58.33%	7	12
The educational materials effectively reflect community-based organizations' knowledge.	8.33%	1	8.33%	1	0.00%	0	33.33%	4	50.00%	6	12
The education materials adequately incorporate community-based organizations' materials (resources, data, projects, etc.).	8.33%	1	0.00%	0	0.00%	0	41.67%	5	50.00%	6	12

Q3 - To what extent do you agree or disagree with the following statements related to learning and behavioral outcomes of the training:

Question	Strongly Disagree		Disagree		Neither agree nor disagree		Agree		Strongly agree		Total

I have greater confidence in how to engage youth in place-based environmental literacy.	8.33%	1	0.00%	0	16.67%	2	50.00%	6	25.00%	3	12
I have a greater understanding of how to engage youth in participatory science.	8.33%	1	0.00%	0	8.33%	1	33.33%	4	50.00%	6	12
I have greater confidence in how to engage youth in participatory science.	0.00%	0	15.38%	2	23.08%	3	23.08%	3	38.46%	5	13
The training provided me with a feeling of having a greater connection to science projects taking place in the Clear Lake region.	8.33%	1	0.00%	0	8.33%	1	16.67%	2	66.67%	8	12

Q4 - To what extent does this training support regional environmental education capacity building in the Clear Lake region?

Answer	Percentage	Frequency
Does not support capacity building	0.00%	0
To some extent	7.69%	1
To a good extent	53.85%	7

To the full extent	38.46%	5
Total	100%	13

Q5 - What parts of the training were most valuable to you and why?

Understanding the need for youth to understand the importance of being God stewards of the land
Networking and meeting like-minded new friends.
The parts of the training that were most valuable to me were how the suggestion of getting the particular age groups of grades 3-5 would engage in their community. The research and data given to us about the iNaturalist app. With how to use it, where and when we could use it, ways from using the app to get the kids involved uder one account was definetly valuable to me.
When introduced to the moduels and different activies to do with the youth.
I appreciate how tribal input was a foundation to this training and curriculum. It truly strengthens the connection to the land and the original stewards. This huge amount of influence is so unique and should be considered the baseline for future programs nation-wide.
I really enjoyed getting to go step-by-step through the 1st module because it helped me understand the goals and best practices for implementation of these lesson plans.
The app Inaturalist will become a daily tool to aid in education of our environment for our Youth to utilize and learn from the collective data.
All of it, thank you very much!
The module outline, materials, links.
I enjoyed seeing the modules and interacting with them. I really wanted planning time, so that was wonderful too. I feel like if next steps aren't discussed it's too easy to walk away and let it slide.
Curriculum is well-planned and easy to implement/follow.
The lesson content and activities are planned and clear.

Q6 - What parts of the training could be improved and how?

More hands on
Introductions on the second day and immediate exchange of contact for them. I enjoy an organized working lunch Ask each particpant what module subject they would like to present
i don't see much that needs to be improved. I'd say maybe talking more about the oak trees and talking about more of the tribal involvement.
There could have been more talking about tribes and about the lake.
Nothing comes to mind at the moment. The quick pilot turnaround will be challenging for those that do not have a direct contact with youth.
I don't think it needs improvement, but I personally am more interested in how this could be adapted to fit the developmental level and learning objectives for preschool-aged children.

Repeat info for people who participated both days. Rearrange schedule so up and moving around is in the PM instead of AM. Very few people knew about it-connect directly with schools. (Not your fault the communication chain may have a few broken links!)
More training on using iNaturalist
I'd love to see videos of the lessons being done with students. I need more help with iNaturalist.
Understanding of the I Natural application and set-up.
Connected to Science standards of CA for formal education implementation.

Q7 - To what extent did this training provide you with tools to engage in education programming with youth?

Answer	Percentage	Frequency
Did not provide tools that I can use	0.00%	0
To some extent	7.69%	1
To a good extent	53.85%	7
To the full extent	38.46%	5
Total	100%	13

Q8 - What next steps would you like to see from our team to further increase capacity for environmental education in the Clear Lake region?

Fund a group of training for regions around the lake
Have a dedicated hub (physical) for check out materials. Maybe CLERC's third floor of the Lakeport Carnegie Building?
maybe have more explaining while seeing some of the stuff in person while just only watching it from the slideshow screen
Be more public. There could be many people in the community that would help take bigger steps.
A possible network of educators and local partners that can be a point of contact
I would like to see this integrated into the formal educational setting and expanded to meet a larger range of developmental levels. I feel strongly that the formative years of a child's life are a great time for children to learn and retain information, so it could be beneficial adding this to the curriculum of children aged 2-7
Plan for extra field trips
Educational presentations in schools and communities about actual facts about the health of the lake.
Outreach to families and schools. Funding a base organization to house and keep material updated.

I think on-going support as pilots proceed is important and the office hours with Sara will help in that regard.
Provide feedback on the pilot program. Provide useful guidance for next steps. The Friday meeting was great in that in invited members of the regional tribes to share their experiences/expertise.
Receive my feedback after I pilot it in April and May.

Q9 - Do you plan to pilot the project materials in your education setting in April-May.

Answer	Percentage	Frequency
Yes	75.00%	9
No (Why not)	25.00%	3
Total	100%	12

No (Why not)

My answer is "Maybe." I do not have direct access to students/youth so my timeline will be crunched to begin with. I will do my best to pilot when I can.
IF we can gather students together quickly enough. Since my organization does not have them already established this may be a hurdle.

Q10 - What other support would you need to be able to implement these materials in your educational setting?

Borrowing the ipads to input iNaturalist data will be very helpful.
More transportation to get the younger children involved. it might be good a program, but it could lack that ability to get them where they need to, to see it in its entirety
Have some more activities that would interest some of the youth and could come back again if they like it.
Nothing comes to mind at the moment.
I do not think I would need much support, but I will need to adjust and accommodate these lesson plans for a younger class.
Funding.
Money for transportation for kids
I think we're good, all that is needed is time to incorporate schedules, etc.
Support with the I Natural program.
None

Q11 - At the conclusion of our project, we plan to hand these materials over to an entity that can host and manage them long term. What suggestions, if any, do you have for organizations or agencies or Tribes that can host and manage these materials long term?

Redbud Audubon partnering with the Lake County Land Trust or over to CLERC that has paid staff over volunteers. But Anderson Marsh Interpretive Adssoication would be great too because of the location for the other side.
id just say to get more tribes involved if possible.
Jacks lavander farm, or any organization that is know by the public that could spread the word also.
Lake County Land Trust, Lake Co. Libraries (maybe as kits that can be checked out)
It is important that they continue to seek feedback from the community and how this curriculum could be adjusted to better meet the needs of our county and its diversity. This process should be ongoing to refine and expand this curriculum.
Land trust
One of the tribes? Lake County Land Trust
funding
I think either the Land Trust or the County Office of Education are the best choices, if they are willing.
I feel Ii am not in a position to make a recommendation.
Lake County Land Trust

Q12 - Please provide any additional comments or suggestions you have related to improving environmental education programs in the Clear Lake region.

Use them - don't be shy.
I'd suggest to have some more of the youth population to help review the overall presentation.
Share to many people in the community that are willing to help the lake and tribes around.
This was awesome! If there's anything you're local federal agencies can do to help, please let us know!
Not that I can think of, thank you all for everything you are doing for our community here in Lake County.
Thank you very much, exciting and inspiring! Great work!
I think experts going into classrooms, maybe targeted to one grade level, would be wonderful. If every student in Lake County, say in 4th grade, had lessons specific to Lake County environmental education all our students might leave here with some background to take into their futures.