

NOAA 21st CCLC Watershed STEM Education Partnership Grants Program

Evaluation Report: Executive Summary

Thank you to all the grantees and program participants who contributed to this evaluation effort and provided photos. Along with NAAEE and NOAA, we appreciate you for sharing your time and expertise with us.

Program Overview

The North American Association for Environmental Education (NAAEE) implemented the 2020-2022 National Oceanic and Atmospheric Association (NOAA) [21st Century Community Learning Center](#) (21st CCLC) Watershed STEM Education Partnership

Grants Program through a cooperative agreement with NOAA, which held an interagency agreement with the U.S. Department of Education (ED). This executive summary highlights overarching findings from the evaluation and offers considerations for future programs.



Water bin workshop at Reinstein Woods Nature Preserve.
Photo: Mary Ronan

Building on the 2017 pilot program, the 2020-2022 program fostered new out-of-school time (OST) partnerships between 21st CCLC sites and environmental education organizations (EEOs) to increase science, technology, engineering, and mathematics (STEM) learning and environmental education offerings during non-school hours for youth across the United States. NAAEE and NOAA encouraged EEOs to implement NOAA's [Meaningful Watershed Educational Experience](#) (MWEE) framework, developed initially for the formal K-12 setting, in addition to engaging in capacity-building, planning, and partnership-building activities with 21st CCLC sites. Thus, two key unique attributes of this program included:

- **MWEE framework implementation in varied OST settings**
- **Emphasis on partnerships between EEOs and 21st CCLC sites**

Map of EEO Grantees



Terms

21st CCLC: Nita M. Lowey 21st Century Community Learning Center program

21st CCLC staff: Administrators, coordinators, and educators of 21st CCLC programs

21st CCLC youth: Youth who attend and participate in 21st CCLC programming

EEO: Environmental education organization: The primary grantee

MWEE: Meaningful Watershed Educational Experience: A NOAA educational framework

OST: Out-of-school time: The informal learning environment that occurs outside of the formal school context

"I think oftentimes, we come into these partnerships, and we're like, oh, here is what we have to offer you. Are you in, or are you out? And for us to take the time – and mainly because it was requested that we do this in the grant – that we take the time to have a formal meeting and to get [21st CCLC staff] feedback on what they want from programs... I think [that's] what made for a more successful program."—*EEO Staff*

Over the course of the program:



830 21st CCLC staff served **5,970** youth



Programs occurred in **virtual, in-person, and hybrid** settings



Youth interacted with **263** science experts



EEOs implemented programs during **summer camps, afterschool programs, school-day field trips, and weekend youth and family excursions**

Program Implementation

The program provided grants to 30 EEOs in 17 states, who partnered with one to eight 21st CCLC sites in each state. Overall, this resulted in 97 21st CCLC sites engaging youth in environmental education in OST settings. The program started during the height of the COVID-19 pandemic, necessitating that grantees adjust their program schedule and activities to adapt to shifting in-person restrictions, staffing changes, and 21st CCLC site social distancing requirements.

Evaluation Overview

[Education Development Center](#) (EDC) evaluated the program using a [culturally responsive evaluation approach](#). The goals of the evaluation were to:

1. Document MWEE implementation in 21st CCLC settings
2. Examine the extent to which youth, EEO, and 21st CCLC outcomes were reached
3. Understand partnerships formed between EEOs and 21st CCLC sites
4. Understand relationships formed between youth and STEM experts
5. Provide feedback for NAAEE, NOAA, and ED for improvement and learning

What is a MWEE?

A MWEE consists of four essential elements and four supporting practices. Essential elements describe “what students do.” They include issue definition, outdoor field experiences, synthesis and conclusions, and environmental action projects. Supporting practices describe “what educators do.” They include educator facilitation, learning integration, sustained experience, and local context.



Students at Mystic Aquarium. Photo: Ayana Melvan

**EEO staff and 21st CLCC
staff developed skills
and expertise through
participating in this program:**

85%

of EEO staff respondents **increased their organization's capacity to implement environmental education programming** in the 21st CCLC context.

77%

of EEO staff respondents **increased their confidence to incorporate MWEEs** into the afterschool context.

94%

of 21st CCLC staff respondents **increased their 21st CCLC site capacity to implement environmental education programming.**

94%

of 21st CCLC staff respondents **increased their awareness of NOAA resources** that can be used in instruction with youth.

Key Findings

EDC offers the following key findings based on analyses of the evaluation data:

1. Youth experience: Youth responded positively to activities that were different from more typical OST experiences – namely being outdoors and engaging in active, hands-on activities.

Youth, EEO staff, and 21st CCLC staff highly valued direct engagement with the local environment.

The project-based nature of the environmental action projects, an essential element of MWEEs, offered youth opportunities to interact with, learn about, and care for their local environment. These experiences laid a foundation for continued engagement with nature and environment-related issues.

Youth enjoyed interacting with EEO staff, who often facilitated activities (e.g., exploring nature, using real science equipment) that youth would not typically experience in OST programs.

Additionally, the multiday or multi-week programs enabled EEO staff and 21st CCLC youth to form and sustain relationships.

2. MWEE implementation: Given the realities of many 21st CCLC settings, EEOs and 21st CCLC staff adapted the MWEE framework to meet the needs of 21st CCLC sites.

Although EEO staff were encouraged to implement NOAA's MWEE framework, common contextual factors of the OST environment necessitated EEOs adapt the framework. These factors included inconsistent youth attendance, limited time for sessions, restrictions on off-site field experiences, and 21st CCLC sites' desires to focus on hands-on activities.

These factors led to the MWEE framework essential elements being done in a "bite-sized" manner. For example, EEO staff implemented MWEE essential elements such as issue definition and synthesis and conclusions briefly or in a limited scope. And while most grantees had a core issue or driving question guiding the activities, EEO staff typically selected the issue with minimal youth input.

3. Building EEO and 21st CCLC capacity and learning: EEO staff and 21st CLCC staff leaned into each other's expertise to create programs.

21st CCLC staff valued EEO staff for their **content expertise, curriculum development skills, and facilitation styles**. For example, 21st CCLC staff perceived EEO staff to be the science content and facilitation experts. EEO staff were typically given authority to implement activities they developed or curated.

EEO staff valued the 21st CCLC staff expertise in navigating site logistics and their knowledge of and relationships with youth. 21st CCLC staff had expertise to share with EEO staff, such as their knowledge of youth's culture and background, recruitment tactics, scheduling, and site logistics and procedures.

Through the program, 21st CCLC staff learned about the importance of implementing environmental education programming for youth.

21st CCLC staff also learned science content alongside youth by participating with youth and observing EEO staff as they facilitated. However, 21st CCLC staff did not often co-facilitate with EEO staff during programming. Whereas for EEO staff, while they brought science expertise to their work, they also gained insights about the 21st CCLC program and how to work with 21st CCLC sites.

4. Grantee partnerships: Despite the differences in 21st CCLC sites and the challenge of the COVID-19 pandemic, EEOs and 21st CCLCs

created partnerships and expressed interest in continuing to work together.

EEOs adopted different approaches to working with each 21st CCLC site, as each site varied by **need, capacity, and resources**. For example, communication preferences and availability of resources across sites varied (such as whether a site had a park or a stream adjacent to the site). Additionally, 21st CCLC staff from site to site varied in how established they were within their specific site and their knowledge of the decision-making processes, which led to individual approaches to programming at each site.

The COVID-19 pandemic exacerbated challenges with EEO and 21st CCLC relationship building.

Relationship-building challenges included inconsistent youth attendance and staff turnover, putting further strain on EEO staff and 21st CCLC staff as they sought to co-plan, communicate, and implement the program.

Despite the challenges, both EEO staff and 21st CCLC staff expressed interest in continuing to work together:

- 66% of 21st CCLC staff respondents indicated that they are very likely to continue implementing environmental education programming at their site.
- 67% of EEO staff respondents indicated that their organization is very likely to pursue future partnership opportunities with a 21st CCLC site.

EEO staff and 21st CLCC staff developed skills and expertise through participating in this program:



**Clear
communication**



**Consistent
staff**



**Agreement on
the goals of
the program**



Flexibility



**Knowledge
about
staff & sites**

Considerations for Future Programs

Based on findings from this evaluation, we offer the following considerations for future programs:

- 1. Given the complexities of the OST context, further discussion and guidance are needed to define which MWEE elements best fit the needs and realities of the OST space and what framework modifications may be necessary.**

Formal K-12 settings operate with a different set of assumptions from the range of OST settings seen in this grant program, such as consistent attendance and the types of activities youth expect to do. Therefore, implementing a MWEE in OST versus a formal K-12 space requires different framing and approaches.

- 2. EEOs need further guidance and support to understand the opportunities and complexities of the OST context, and specifically the 21st CCLC context.**

While the philosophy of many EEOs align with the MWEE framework, EEOs are not always familiar with the OST context, and specifically with the 21st CCLC context. In the future, EEOs may benefit from the opportunity to discuss and understand the realities of the 21st CCLC context prior to grant funding.

- 3. Future grants would benefit from a clear articulation of 21st CCLC staff roles in the program, particularly related to capacity building, and an agreed-upon vision for sustaining the program beyond the grant.**

21st CCLCs varied greatly in their site capacity and staff capacity to organize and facilitate MWEEs without the direct support of EEOs. It is unclear whether professional development opportunities facilitated by EEOs would provide sufficient training for 21st CCLC staff to implement MWEEs on their own. Additionally, more information is needed to understand the benefits of training



Gulf Coast University's Creating Climate Leaders Program.

Photo: Jen Jones

21st CCLC staff to facilitate environmental education programming due to high staff turnover at some 21st CCLC sites.

- 4. Building on the successes of this program, EEOs and 21st CCLCs should continue to develop partnerships and collaboratively design programming around shared goals.**

EEOs should engage 21st CCLC staff early on to discuss ideas for the program, receive input from 21st CCLC staff about what is feasible at their site and what resources they have available, and discuss scheduling. This co-development and involvement of EEO and 21st CCLC staff at multiple levels would help build collective buy-in toward integrating EEOs so their activities do not feel like a "one-off" program at the 21st CCLC site.

"It was very fun using the microscopes, that was my first time using a microscope. I saw plankton for the first time."—21st CCLC Youth
