STUDENT OUTCOME: MAY 2022 QUARTERLY PROGRESS MEETING

OUTCOME: CONTINUALLY INCREASE STUDENTS' AGE-APPROPRIATE UNDERSTANDING OF THE WATERSHED THROUGH PARTICIPATION IN TEACHER-SUPPORTED, MEANINGFUL WATERSHED EDUCATIONAL EXPERIENCES AND RIGOROUS, INQUIRY-BASED INSTRUCTION, WITH A TARGET OF AT LEAST ONE MEANINGFUL WATERSHED EDUCATIONAL EXPERIENCE IN ELEMENTARY, MIDDLE AND HIGH SCHOOL DEPENDING ON AVAILABLE RESOURCES.

MANAGEMENT APPROACH 1: INCREASE PROFESSIONAL DEVELOPMENT OPPORTUNITIES FOR EDUCATORS (PRE-SERVICE, TEACHERS, AND NON-FORMAL) TO SUPPORT THE DEVELOPMENT AND IMPLEMENTATION OF MWEES.

MANAGEMENT APPROACH 2: INCREASE THE VISIBILITY AND ADOPTION OF MWEES AS AN EDUCATIONAL BEST PRACTICE.

ABSTRACT: THE STUDENT OUTCOME UNDER THE ENVIRONMENTAL LITERACY GOAL EXPERIENCED UNEVEN PROGRESS OVER THE TWO YEAR REPORTING PERIOD. THE COVID-19 PANDEMIC DISRUPTED THE FIELD OF EDUCATION TO AN EXCEPTIONAL DEGREE INTERFERING WITH THE BASIC FUNCTIONS AND PROCEDURES OF SCHOOLS INCLUDING WORK ON ENVIRONMENTAL LITERACY. THE EDUCATION WORKGROUP POSTPONED DATA GATHERING OF THE BIENNIAL ENVIRONMENTAL LITERACY INDICATOR TOOL (ELIT) UNTIL 2022. ENVIRONMENTAL EDUCATION PROVIDERS ADAPTED AND PROGRAMMING CONTINUED IN VIRTUAL AND HYBRID FORMATS. SEVERAL STATE LEVEL ACTIONS THAT SUPPORT THE STUDENT GOAL WERE ACHIEVED WHILE OTHERS BECAME IMPOSSIBLE. THE UPHEAVAL CREATED BY THE PANDEMIC BOTH REINFORCED THE NEED AND VALUE FOR OUTDOOR ENVIRONMENTAL EDUCATION WHILE RAISING NEW CHALLENGES TO ENGAGING OUR EDUCATION PARTNERS AT THE STATE AND SCHOOL SYSTEM LEVELS. OPPORTUNITIES AND CHALLENGES HAVE NEVER BEEN GREATER THAN THEY ARE IN EDUCATION RIGHT NOW. MAKING MEANINGFUL PROGRESS STILL DEPENDS ON CONNECTING EDUCATION SYSTEMS WITH NATURAL RESOURCES SECTOR PROGRAMS AND ASSETS AND INCREASING INVESTMENT IN CURRICULAR INITIATIVES.
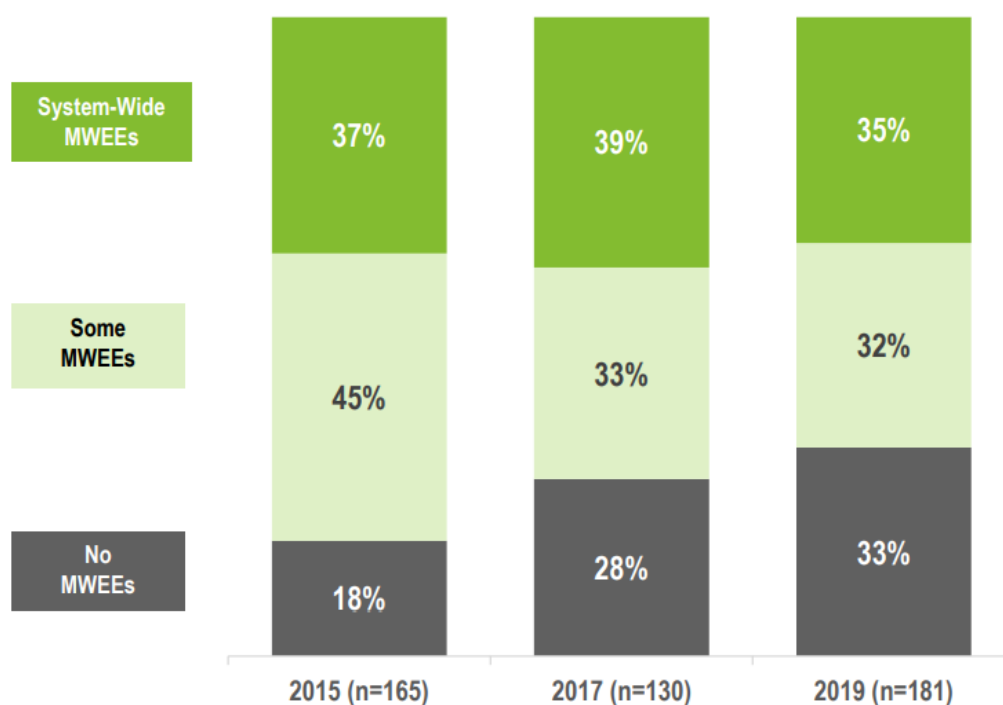
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1. ARE WE, AS A PARTNERSHIP, MAKING PROGRESS AT A RATE THAT IS NECESSARY TO ACHIEVE THIS OUTCOME? USE A GRAPH OR CHART TO ILLUSTRATE WHERE FEASIBLE (REPLACE EXAMPLE PROVIDED WITH YOUR ILLUSTRATION).
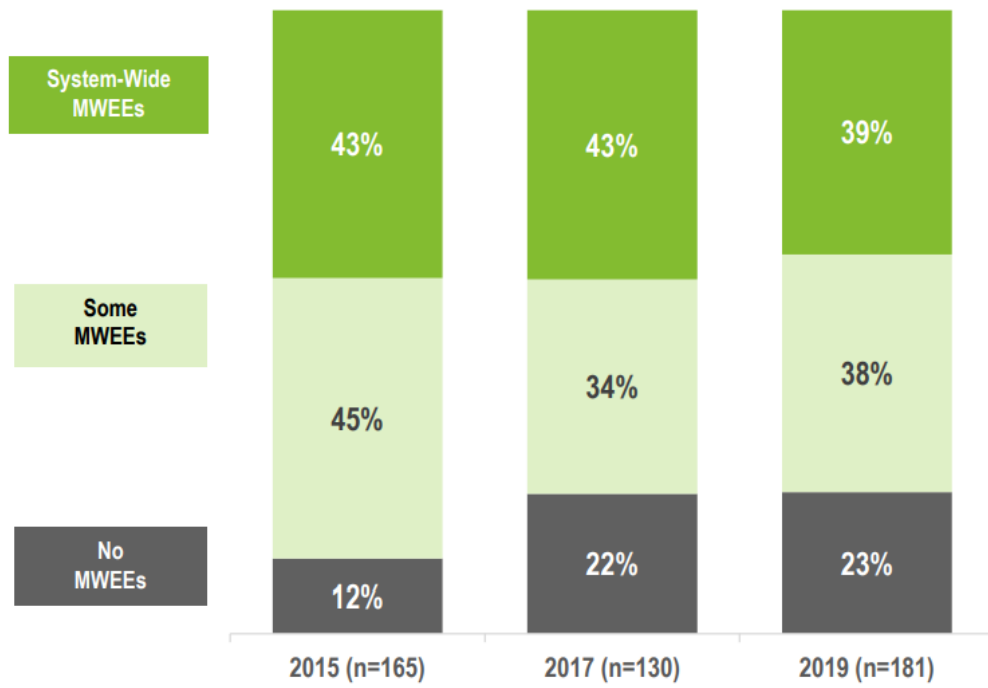
The Student Outcome does not include a specific numeric target that we measure against. The outcome states the goal to offer "at least one meaningful watershed educational experience in elementary, middle, and high school" and we measure this through the Environmental Literacy Indicator Tool (ELIT), self-reported at the school district level, which is used on an every-other-year basis. The last data collection and analysis was conducted in 2019 and was put on hold for the 2021 school year due to the strain that COVID-19 put on the education system. Anecdotally, it seems that many of the structures that support environmental literacy, like state working groups and most environmental education partners, have generally stayed intact. However many programs and efforts that directly impacted schools were not able to move forward. Generally this has been a period of pivoting and maintenance of effort rather than growth. Network development surfaced as a theme and strategy for not only building resilience into the systems but also to increase scaling and sustainability.

The graphs below display the trend in MWEE Availability among Local Education Agencies (school districts) from 2015 - 2019 at the elementary, middle, and high school level. The complete 2019 ELIT Report can be viewed here. The next ELIT survey will be administered in 2022. Participation in the ELIT survey is voluntary. As a greater number of LEAs report their activities through ELIT, the understanding of the availability of MWEEs will be more accurate.
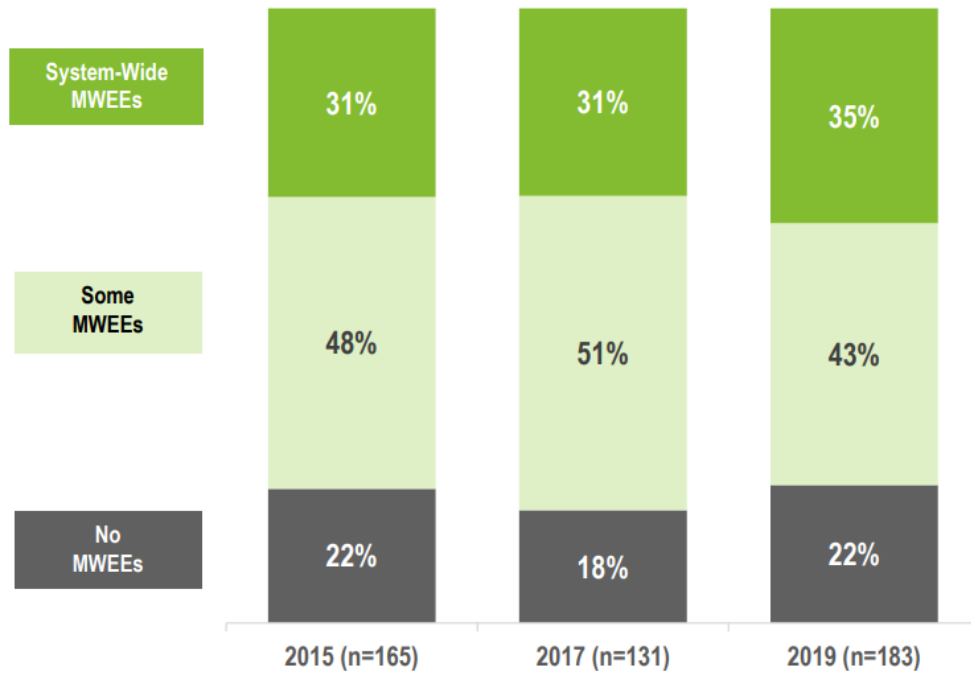
Changes in MWEE Availability in the Watershed: Elementary Grades (2015-2019)

Changes in MWEE Availability in the Watershed: Middle School Grades (2015-2019)

	System-Wide MWEEs	Some MWEEs	No MWEEs
2015 (n=165)	43%	45%	12%
2017 (n=130)	43%	34%	22%
2019 (n=181)	39%	38%	23%

Changes in MWEE Availability in the Watershed: High School Grades (2015-2019)

	System-Wide MWEEs	Some MWEEs	No MWEEs
2015 (n=165)	31%	48%	22%
2017 (n=131)	31%	51%	18%
2019 (n=183)	35%	43%	22%

2. Looking back over the last two or more years, describe any scientific (including the impacts of climate change), fiscal, and policy-related developments that impacted your progress or may influence your work over the next two years. Have these resulted in revised needs (*e.g.,* less, more) to achieve the outcome?

COVID disruptions and the shift to virtual education severely interfered with the ability to implement both student MWEEs and professional development although there were some notable successes. School districts implementing the Next Generation Science Standards have both benefited from and been hindered by the implementation of new standards. Resources like the MWEE Guide for Educators and associated professional development from both formal and nonformal partners has helped with this transition. Progress has been made in MWEE recognition and adoption across many jurisdictions. During COVID lockdown, while teachers were transitioning to virtual learning, virtual professional development sessions on environmental education topics – often tailored to suit teachers' time availability – were well-attended, as everyone scrambled to learn new skills and technologies to enhance learning.

Still, school district investments in MWEE instruction continue to lag far behind the need, specifically related to staff dedicated to coordinating field experiences and developing community partnerships as well as the transportation costs to access field experiences off school grounds. Competing priorities, particularly in underserved school districts, continue to depress the rates of MWEE implementation and teacher professional development.

3. BASED ON THE RED/YELLOW/GREEN ANALYSIS OF THE ACTIONS DESCRIBED IN YOUR LOGIC AND ACTION PLAN, SUMMARIZE WHAT YOU HAVE LEARNED OVER THE PAST TWO YEARS OF IMPLEMENTATION.

What worked?

- **Emergency grants for environmental literacy providers:** The EPA Chesapeake Bay Office created a fast-acting grant program to support EE providers that were hit hard by the programmatic pause created by the pandemic.
- **Creative new tools:** New tools and practices emerged amongst environmental literacy providers to offer modified outdoor learning experiences for students during COVID-19. We expect many of these will be used to enhance outdoor learning in the future. For example, virtual field experiences could be used to orient students, teachers, and chaperones before they arrive at an in-person field experience, students may choose to use a storymap to communicate about what they've learned, or teachers may include GIS products to portray their school grounds.
- **Being adaptable:** Actions that would normally be occurring in-person for environmental literacy practitioners/ educators (like specific networking/information sharing, conferences, etc) adapted to the virtual format. We expect virtual convenings to continue when appropriate. However many of these experiences were diluted and/or abbreviated because of the natural limitations of meeting online. It's unclear if the full desired impact of such actions was realized.
- **Avoiding redundancy:** Actions associated with COVID-response were mostly completed, however those related to more legacy-documentation (like developing a survey assessing perceptions of virtual learning or compiling best practices around virtual professional development) were not completed, likely due to a surge in similar activities led by other reputable educational institutions that would have made these products/efforts redundant.
- **Champions in the pre-service teacher space:** A handful of champions from within higher education were able to find some success in implementing MWEEs into pre-service programs. Moving forward, we need to identify a similar set of champions to connect us with opportunities to enlist the help of existing education leadership.

- **EE Grant funding:** Overall, actions that are connected to grant-funded work (NOAA, CBT, DNR, etc) are mostly complete or on track.

What didn't work?

- **COVID-19 impeded efforts to implement full fidelity MWEEs:** As described previously, COVID has had an outstanding impact on our education systems. MWEEs were likely not implemented with full fidelity to the framework (or sometimes at all) and thus products, like Exemplar ELMs, were not being created or refined.
- **COVID-19 impeded efforts with education leadership:** To date the majority of the work of the Education Workgroup and environmental literacy (EL) partners have operated under the theory of change that if we train teachers in the MWEE approach, provide them content knowledge in environmental topics, and provide additional support in the outdoor field experience AND if we do this work at the district level, we will advance systemic environmental literacy in the region. In recent years, including in the 2020 SRS review, the Education Workgroup and EL partners identified the need to work within other systems of influence including preservice teacher programs, district and school administrator professional development, and superintendent awareness and advocacy, among others. Little progress has been made in these areas over the past two years as COVID put a damper on our ability to attract the attention of those in educational leadership positions and higher education.
- **Not identifying a responsible party:** Actions where the responsible party does not regularly attend Education Workgroup Meetings and/or doesn't have a point-person that serves as that liaison are less likely to be complete or on track.
- **COVID relief funds:** Huge opportunity for outdoor learning and other EE priorities to fit in, but unclear how many districts took advantage of it.

4. BASED ON WHAT YOU HAVE LEARNED THROUGH THIS PROCESS AND ANY NEW DEVELOPMENTS OR CONSIDERATIONS DESCRIBED IN RESPONSE TO QUESTION #2, HOW WILL YOUR WORK CHANGE OVER THE NEXT TWO YEARS? IF WE NEED TO ACCELERATE PROGRESS TOWARDS ACHIEVING OUR OUTCOME, WHAT STEPS ARE NEEDED AND, IN PARTICULAR, WHAT SPECIFIC ACTIONS OR NEEDS ARE BEYOND THE ABILITY OF YOUR GROUP TO MEET AND, THEREFORE, YOU NEED THE ASSISTANCE OF THE MANAGEMENT BOARD TO ACHIEVE?

How will our work change? In order to advance progress toward the Student Outcome, our regional professional community needs to:

- **Collect and use data from the ELIT Survey:** The next ELIT Survey is going to be critical for the community to get a sense of the losses or setbacks in environmental literacy that may have resulted from the pandemic. The Education Workgroup will use this information to identify areas where there have been regressions in environmental literacy efforts (student MWEEs and sustainable school efforts, particularly) and work with states to strategically address those areas. The Workgroup also has the opportunity to leverage some of the research demonstrating that outdoor classrooms can be used to socially-distance students – utilizing the health and safety aspect as an advantage to promote outdoor learning. This information could be useful if the status-quo of in-person learning is challenged in the future.
- **Build on the Mid-Atlantic Environmental Education Network initiative:** We need to prioritize the identification of network weavers and influencers who can specifically be working in geographies of need (identified by both the new ELIT data and our existing equity mappers) and in working with school/district administrators. A greater emphasis on the development of

support structures at the district level (like Environmental Literacy Plans, Coordinators of Environmental Literacy, and partnership-driven local networks) will create the conditions for successful design, implementation, and sustainability of MWEEs.

● **Address the issue of funding:** Funding continues to be a barrier to progress in ensuring that every student has a Meaningful Watershed Educational Experience. A state-wide approach continues to be the best strategy. The Education Workgroup must identify new funding partners who can support MWEEs in areas where B-WET or CBT are not currently reaching (specifically in the states of PA, VA, and DE). The EL community in each state is looking closely at what similar and related efforts we can collaborate more closely with in order to meet state and local priorities (STEM, Workforce, Social-Emotional Learning, Agricultural Education, etc).

● **Integrate networking and principles of social science into our work:** The Education Workgroup continues to benefit from learning about and implementing best practices for network development in the environmental literacy space. To date, this has been spearheaded by our contract with Local Concepts however there is a growing emphasis of this manner of thought being applied within the Stewardship GIT and the wider Bay Program partnership. Principles of social science, including network development, can be implemented to accelerate progress towards our shared goals.

What specific actions do we need from the Management Board? To advance progress toward the Environmental Literacy Goal, Management Board and high level education leadership assistance is needed for the following:

Overarching Need: Establish environment-focused pathways in both Career Technical Education (CTE) and STEM for each state to produce workforce ready graduates.

Specific actions to address need:

1. Management Board Members: If you choose, nominate staff from the jurisdiction you represent to participate in a conversation around diversifying the environmental workforce through youth programs (high school/first jobs/college), including exploring intentional pathways involving CTE/STEM. Email names to Shannon Sprague (shannon.Sprague@noaa.gov) by May 26th.
2. Management Board Members: Establish an Action Team at the Chesapeake Bay Program to focus on Workforce pathways (Education Workgroup, Diversity Workgroup, STAC, others).

Overarching Need: Sustainable funding to implement systemic environmental literacy programming in each school district.

Specific actions to address need:

Department of Education representatives/Management Board Members:
We need to understand the cost required to implement and sustain systemic MWEEs in your state. CBP could assist by providing the sample survey we have prepared and/or hiring a contractor to interview district reps. Would like numbers by the end of the calendar year.

1. By the next Management Board meeting, we are seeking a "yes" or "no" from each state as to whether they will provide a number by the end of the calendar year and what assistance they need.

Overarching Need: Up-to-date data and information from every school district in the watershed on their efforts to create and sustain EL programming.

Specific actions to address need:

1. Department of Education representatives: Send the Environmental Literacy Indicator Tool (ELIT) survey to district superintendents and content supervisors for each of the school districts in your states.

Overarching Need: Maintain high level focus and coordination of state cabinet members and partners on Environmental Literacy Goal.

Specific actions to address need:

It is Maryland's opportunity to host the 2023 Environmental Literacy Summit. PSC is the co-host of the event with Education Workgroup.
1. Seeking agreement from Maryland PSC representative to co-host, and staff level contact(s) to begin planning in Fall.

5. WHAT STEPS ARE YOU TAKING, OR DO YOU RECOMMEND, TO ENSURE YOUR ACTIONS AND WORK WILL BE EQUITABLY DISTRIBUTED AND FOCUSED IN GEOGRAPHIC AREAS AND COMMUNITIES THAT HAVE BEEN UNDERSERVED IN THE PAST?

The Education Workgroup is continuing to use GIS tools like the ELIT/Equity Mapper to identify priority geographies that have been underserved in the past. Similarly, major funders in the region are using these kinds of tools in their requests for proposals as well as adapting their review criteria to better reach underserved populations. The Chesapeake Bay Trust and NOAA Chesapeake Bay Office are funding two new projects through the Outdoor Learning Network Initiative. OLNI is intentionally designed to support underserved school districts by breaking down barriers related to funding requests, providing ample technical assistance in MWEE design, teacher professional development and the development of a local network. Lastly, the Education Workgroup is increasing communication across funding entities to better spread the existing environmental literacy dollars available across geographies and organizations.