

CA B-WET FY 22: Central California		
Grant Recipient	Project Description	Funded Amount
Santa Cruz County Office of Education (SCOEE) (Student & Teacher MWEE)	<p><b>“Relevant Action and Learning for Science (REAL Science)”</b> — REAL Science will incorporate all elements of a Meaningful Watershed Educational Experience (MWEE). REAL Science will increase the scientific and environmental literacy of teachers and students by integrating classroom curriculum with outdoor science and stewardship activities. This will be achieved by providing high quality professional learning opportunities to prepare teacher leaders throughout Santa Cruz County school districts to implement MWEEs with students and share resulting programs with teacher teams at all school sites in the county. REAL Science will advance the Next Generation Science Standards (NGSS), the California Environmental Literacy Standards, and the Ocean and Climate Literacy Essential Principles through engaging students and teachers in outdoor field experiences and classroom activities that will increase understanding and stewardship of these local watersheds, the ocean, and the Monterey Bay National Marine Sanctuary. REAL Science was developed to be consistent with the National Oceanic and Atmospheric Administration (NOAA) principle that knowledge and commitment built from firsthand experience, especially in the context of one’s community and culture, are essential for achieving environmental stewardship. Carefully selected experiences driven by rigorous academic learning standards and nurturing a sense of community, will further connect students with their watershed, help reinforce an ethic of responsible citizenship, and promote academic achievement.</p> <p>The SCCOE County Science Initiative realizes that equity of student access to environmental learning experiences depends on the involvement of the classroom teacher. REAL Science will create a system of support by addressing the need to train teacher leaders at every school site across Santa Cruz County who will then support other teachers’ implementation of MWEE projects, so that ultimately all students will have access to participation. All ten school districts in Santa Cruz County are engaged in implementation of NGSS and Common Core State Standards. New academic achievement standards require shifts in instruction and pedagogy, as well as curriculum. To eventually provide this support to all teachers in all Santa Cruz County schools, the SCCOE County Science Initiative has developed a teacher leader support program. The Teacher Leadership Institute (TLI) is an innovative 5-day summer institute with three follow-up support days during the school year. The Institute supports emerging teacher leaders for science by deepening knowledge, increasing confidence, and enhancing abilities to support the implementation of the Next Generation Science Standards using the local environment as a source of phenomena. The SCCOE County Science Initiative is collaborating with the Pajaro Valley Unified School District (PVUSD) which is planning to submit a B-WET proposal that addresses Priority 2 to provide MWEEs for students. The SCCOE REAL Science B-WET project will include PVUSD teachers in professional learning activities, so that their MWEE experiences can inform the work of teachers in the nine other Santa Cruz County schools districts and contribute to this systemic effort to create equitable student access to MWEEs across grades and districts.</p>	Requested Funding: \$99,999
Ventana Wildlife Society (Student MWEE)	<p>Ventana Wildlife Society's (VWS) strategic goal for Education and Outreach is to instill a conservation ethic and inspire youth to act by fully integrating innovative scientific and ecological education. For this project we will provide planning, curriculum, resources, and transportation for 28 recurring classes throughout the school year for six teachers and their students, as well as two summer sessions of six classes each, to participate in Meaningful Watershed Educational Experiences (MWEEs). This is an increase from our current five school year classes and two summer sessions.</p> <p>Program curriculum focuses on the Salinas and Carmel Valleys and the central coast region as a primary watershed of the Monterey Bay National Marine Sanctuary (MBNMS). Our partners are schools that specialize in serving at-risk teens. We will serve 128 youth at an average cost of \$1,000 per participant. Each class includes one teacher, and some may include a therapist, probation officer or teacher aid. Teachers assist in the development and co-instruction of MWEEs. We will continue to provide pre-program training and teacher support throughout year, as well as develop a new post program training for the teachers we work with to prepare them to plan and lead their own outdoor experiences and develop the community partnerships and resources. With few exceptions' classes take place outdoors on public lands. Should the on-going pandemic make meeting in person possible, we have the capacity to pivot to meaningful virtual programming, as demonstrated this past year.</p>	Requested Funding: \$70,000

<p>Save the Whales (Student MWEE)</p>	<p><b>“Bees, Butterflies, and Blue Whales: Teaching South Monterey County Students about Ecosystem Resilience”</b> — Save The Whales is proposing to partner with Frank Ledesma Elementary School in Soledad, a Title I school, to provide a meaningful watershed educational experience for approximately 84 children in grade 5. The proposed program focuses on culturally diverse, low-income, and underserved children in southern Monterey County. South County children are typically provided far fewer extracurricular educational opportunities than children in other parts of the county, due to their geographic remoteness. This remoteness, coupled with the added isolation of COVID-19, has made the educational situation for children in Soledad especially grim. The 5th grade teachers at Frank Ledesma Elementary School have been doing the best they can with little guidance and very few resources. The B-WET project proposed for 2021/2022 follows two successful years of B-WET programming in South County and is intended to provide a special extracurricular program for a smaller, more focused group of children who have been especially impacted, educationally, by the COVID pandemic.</p> <p>This year’s driving question is: <i>“What is ‘ecosystem resilience,’ and what can I do to help make ecosystems more resilient to climate change and other stressors?”</i> To help students answer that question, we have designed a mix of classroom (both in-class and distance learning) and outdoor activities that focus on two different ecosystems, using bees and butterflies (land-based) and blue whales (ocean) as platforms for discussing watersheds, the connection between land and sea, urban runoff, marine debris, the Monterey Bay National Marine Sanctuary, and the importance of stewardship. The program will provide regular student “contact” every 2-4 weeks over the course of one school year and will consist of the following components: 1) Teacher Orientation; 2) Save The Whales’ WHALES ON WHEELS WOW™ program, “Land and Sea Watershed Model”; 3) WOW™ “Land and Sea Trash Timeline Game”; 4) NOAA Marine Debris Art Contest; 5) “WOW™ “Blue Whales: Gardeners of the Ocean”; 6) Peer-to-Peer Sharing: Blue Whales Video from 5th Grade Students in Watsonville; 7) WOW™ “Dee The Beautiful Whale”; 8) Outdoor Activity: Schoolyard Litter Pickup; 9) WOW™ “Pollinators and Ecosystems”; 10) Our Water Our World’s “Squish No Squish Game”; 11) Outdoor Activity: Plant a Butterfly Garden; 12) Outdoor Activity: Butterfly Garden Stewardship; 12) Field Trip: Salinas River State Beach; 13) Final Reflection. Each element of the project will reinforce and build upon the lessons learned previously. The project cost per student is \$593. This year’s driving question is: <i>“What is ‘ecosystem resilience,’ and what can I do to help make ecosystems more resilient to climate change and other stressors?”</i> To help students answer that question, we have designed a mix of classroom (both in-class and distance learning) and outdoor activities that focus on two different ecosystems, using bees and butterflies (land-based) and blue whales (ocean) as platforms for discussing watersheds, the connection between land and sea, urban runoff, marine debris, the Monterey Bay National Marine Sanctuary, and the importance of stewardship. The program will provide regular student “contact” every 2-4 weeks over the course of one school year and will consist of the following components: 1) Teacher Orientation; 2) Save The Whales’ WHALES ON WHEELS WOW™ program, “Land and Sea Watershed Model”; 3) WOW™ “Land and Sea Trash Timeline Game”; 4) NOAA Marine Debris Art Contest; 5) “WOW™ “Blue Whales: Gardeners of the Ocean”; 6) Peer-to-Peer Sharing: Blue Whales Video from 5th Grade Students in Watsonville; 7) WOW™ “Dee The Beautiful Whale”; 8) Outdoor Activity: Schoolyard Litter Pickup; 9) WOW™ “Pollinators and Ecosystems”; 10) Our Water Our World’s “Squish No Squish Game”; 11) Outdoor Activity: Plant a Butterfly Garden; 12) Outdoor Activity: Butterfly Garden Stewardship; 12) Field Trip: Salinas River State Beach; 13) Final Reflection. Each element of the project will reinforce and build upon the lessons learned previously. The project cost per student is \$593.</p>	<p>Requested Funding: \$69,895</p>
<p>Salinas Union High School District (Student &amp; Teacher MWEE)</p>	<p><b>“Community Science &amp; Outdoor Learning Collaborative”</b>- The Salinas Union High School District (SUHSD) Community Science &amp; Outdoor Learning Collaborative is a multi-year partnership between the district’s Educational Services team, Bird School Project (BSP), and Pacific Grove Museum of Natural History (PG Museum) to create and implement annual MWEEs for teachers and local outdoor education instructors that link to ongoing outdoor learning and youth-focused community science projects for students in SUHSD.</p> <p>Teacher leaders will learn alongside local outdoor educators and leaders from community-based partner organizations to integrate long-term outdoor exploration and monitoring of the Salinas River Watershed and the Monterey Bay National Marine Sanctuary into their curricula. This project broadens the impact of current regional collaborations designing MWEE lesson sequences with cohorts of teachers in Santa Cruz County through the Office of Education’s B-WET-funded REAL Science initiative.</p> <p>The Community Science &amp; Outdoor Learning Collaborative will 1) Create a professional learning community for teachers in the SUHSD and local outdoor educators to engage in pedagogical practices, have impactful outdoor experiences together, and build their environmental content knowledge of consumer choices, climate change, and local ecosystem resiliency; and 2) Unite this professional learning community of teachers and outdoor education instructors to implement and facilitate ongoing MWEEs for students in SUHSD. The Community Science &amp; Outdoor Learning Collaborative will spend \$5,160 per participant divided by 30 (18 science teachers and 12 outdoor educators) and \$25.80 per student divided between 6,000 students.</p>	<p>Requested Funding: \$99,840</p>

CA B-WET FY 22: Southern California		
Grant Recipient	Project Description	Funded Amount
Ventura Unified School District (Student & Teacher MWEE)	<p><b>“Ventura River Action Network (V-RAN)”</b> — The overarching goal of this project proposal is to create a long-lasting interdisciplinary, tiered and place-and-project based environmental education program for Ventura Unified School District science teachers and their students that builds stewardship for the Ventura River Watershed and the Santa Barbara Channel, including CINMS. V-RAN builds upon the EECCOA Program (previously funded by CA NOAA BWET), and the support of an experienced network of research professionals working to remove the Matilija dam.</p> <p>V-RAN will successfully increase environmental, climate, energy, and ocean literacy for middle and high school students over a 3 year period, particularly youth who are socio-economically unprivileged. V-RAN will adopt the EECCOA curriculum to VUSD learning objectives supported by place-based MWEEs, youth citizen science, and action-oriented project-based learning. The teachers will be able to select, adopt and use as most appropriate lessons for their students’ grade-level. The result will be students’ understanding of how natural systems such as the hydrosphere, atmosphere and biosphere interact and proceed through cycles that humans depend upon, benefit from, and can alter. V-RAN will illustrate with local relevant examples such as the impacts of the Matilija dam on the Ventura River Watershed, the region’s wildfires, drought, ocean acidification, and plastic pollution through in-class or virtual instruction, youths’ participation in field research, habitat restoration, and students designs of solutions to reduce their school or home environmental footprint.</p>	Requested Funding: \$99,992
CA State University Channel Islands (Student MWEE)	<p><b>“Crossing the Channel (CTC)”</b>- The ultimate goal of CTC is to cultivate a new community of Santa Barbara Channel Watershed stewards and transform the learning experiences of local students by building a collaborative professional network of local resources (i.e. federal agencies, local school district, non-profits, and universities) that support MWEEs for underrepresented students both in middle school and undergraduate mentors. This project builds on the strong interdisciplinary and collaborative culture at CSUCI and applies it across academic levels to achieve excellence in STEM education by integrating real-world, projectbased learning into a MWEE. Students, as members of hierarchical mentoring teams (i.e. middle school students, CSUCI undergraduates, and STEM Professionals), will engage in the STEM disciplines and actively participate in Santa Barbara Channel Watershed research by 1) designing and practicing data collection with professional research tools, 2) implementing long-term monitoring protocols, 3) analyzing historical data-sets, and 4) constructing scientific reports and outreach projects.</p>	Participating on a no cost extension.
Oxnard School District (Teacher MWEE)	<p><b>“The Islands Around Us”</b> — Oxnard School District (OSD) will partner with Channel Islands National Park (CINP), Channel Islands National Marine Sanctuary (CINMS), California State University Channel Islands (CSUCI), US Fish and Wildlife Service (USFWS), and Oxnard Union High School District (OUHSD) to create and implement a professional development program for up to 100 teachers in grades 2–8, including a cohort of at least 4–5 high school science teachers from OUHSD.</p> <p>The professional development program aims to improve science education in OSD and OUHSD by providing teachers with place-based knowledge and pedagogical opportunities that, through an exploration of CINMS and CINP, focus on local environmental science phenomena in the Santa Barbara Channel Watershed and Oxnard Watershed. There will be an emphasis on human impacts to these environments and connections to the California Next Generation Science Standards (NGSS) and the Environmental Principles and Concepts (EP&amp;Cs). The professional developments will take place at CINP, CINMS, and in OSD and will be delivered by OSD and OUHSD staff and our community partners. The professional developments will include: (1) Single and multi-day field experiences to CINP and CINMS to learn about these systems and associated current environmental issues and research, and to engage in MWEEs. (2) Place-based environmental research and education at the CSUCI Santa Rosa Island Research Station (SRIRS) located within CINP. (3) Single-day experiences in OSD native plant gardens to teach environmental background knowledge and provide teaching strategies for outdoor learning. (4) An educator Summer Collaboration Workshop, where teachers will integrate their learning into their grade-level curricula and incorporate local environmental phenomena, MWEEs, and other related activities into lesson plans.</p> <p>Pending success in Year 1, we will seek subsequent funding opportunities to our participant base and communicate the learning from year 1 to a broader audience. The Islands Around Us program will invest approximately \$855 per teacher, for up to 80 teachers (5 high school teachers + 38 elementary school teachers + 38 middle school teachers) serving approximately 7000 students a year (with the potential to reach many more students), and with opportunities for teachers to engage in 2 to 56 hours of professional development.</p>	Participating on a no cost extension.

CAB-WET FY 22: Northern California		
Grant Recipient	Project Description	Funded Amount
Cotati-Rohnert Park Unified School District (Student & Teacher MWEE)	<p><b>Students Understanding Peoples, Environments and Resources (SUPER)</b> — The Cotati-Rohnert Park School District (CRPUSD) and partners are proposing to design and implement the professional learning program, Students Understanding Peoples, Environments and Resources (SUPER), for 3rd, 4th, 5th grade teachers for the seven elementary schools of CRPUSD.</p> <p>The project is driven by this question: “How does the intersection of humans and the environment impact communities?” Through the three-year project, students, teachers, administrators, and local environmental education educators will experience and research answers to that question together through the implementation of Meaningful Watershed Educational Experiences (MWEEs) on the school sites, the local watershed community to the Pacific coast. Participating teachers from Year 1 will take on leadership roles in Years 2 and 3 in order to provide a sustainable professional learning structure beyond the life of the grant.</p> <p>The proposed project will provide targeted professional learning necessary to bring place-based environmental literacy education into student-centered, NGSS aligned classrooms. It will directly build upon the work from early partnerships with the Laguna de Santa Rosa and the Center for Environmental Inquiry. The proposal also targets the project-based learning partnership that the district has had with Sonoma State University School of Education. The project aligns with the district’s 5 year plan which targets building the capacity of multilingual students through contextualized and universally designed learning experiences. The intent is to get students outside multiple times to develop their academic language and communication skills. The proposed project will provide targeted professional learning necessary to bring place-based environmental literacy education into student-centered, NGSS aligned classrooms. It will directly build upon the work from early partnerships with the Laguna de Santa Rosa and the Center for Environmental Inquiry. The proposal also targets the project-based learning partnership that the district has had with Sonoma State University School of Education. The project aligns with the district’s 5 year plan which targets building the capacity of multilingual students through contextualized and universally designed learning experiences. The intent is to get students outside multiple times to develop their academic language and communication skills.</p>	Requested Funding: \$99,425
Solano County Superintendent of Schools (Student MWEE)	<p><b>“Spinning Salmon Monitoring Project”</b> - Students and teachers in the Spinning Salmon Monitoring Project will join a team of federal and academic researchers and become crucial scientific partners in an effort to solve a mystery that threatens salmon populations throughout California’s Central Valley. By engaging with this project, students will define issues that matter to their community as they learn more about their local watershed, make observations of salmon in a classroom aquarium, and submit data to the science team. Students will integrate their learning experiences as they draw direct connections between content learning, their observations and data, and their Meaningful Watershed Educational Experiences (MWEEs).</p> <p>300+ youth will have access to MWEEs by engaging in this Youth-Focused Community and Citizen Science (YCCS) project. With the collaboration of community partners focused on environmental stewardship methods, students will engage in MWEEs within their local watershed. The Spinning Salmon Monitoring project will train 60 teachers, with a focus on recruiting teachers who service BIPOC, low-income, multi-lingual, and/or systems-impacted youth. By focusing on teacher training and ongoing mentoring, this project will allow for a self-sustaining model at the end of the grant period. Materials developed as part of this program will support teachers in making necessary shifts in instruction for engagement with all three dimensions of the Next Generation Science Standards (NGSS) as well as California’s Environmental Principles and Concepts (EP&amp;Cs).</p>	Requested Funding: \$100,000
Santa Clara County Office of Education (Student MWEE)	<p><b>“Student and Professional Learning to Advance Stewardship for H2O (SPLASH!)”</b> - The Santa Clara County Office of Education will deliver a high- quality professional learning model to middle school teachers to provide meaningful watershed experiences via project-based learning opportunities to students in Gilroy Unified School District and Morgan Hill Unified School District. SPLASH! will build teacher capacity to provide culturally relevant teaching while building teacher content knowledge about the watershed to support environmental stewardship during virtual, blended, or in person learning.</p> <p>Teachers and students in the SPLASH! project will investigate the local watersheds surrounding their schools, neighborhoods, and region to learn how this watershed feeds into and affects the larger Monterey Bay National Marine Sanctuary (MBNMS). They will utilize data and research to guide their focus on an issue related to the local watershed and develop learning and projects that support their increased knowledge and stewardship of this area. To do this, teachers will engage students in activities that spark their curiosity and cause them to ask thought-provoking questions about the data and explore the various methods of creating data visualizations to better communicate their findings with their classmates and others. Teachers can guide students with formulating questions they may have about this issue and have students plan investigations and field studies to find out more. The SPLASH! project will emphasize Meaningful Watershed Educational Experiences (MWEE) through hands-on, experiential learning and the use of research, data collection, and analysis. Teachers and students will learn from local experts from Walden West and the San Jose State University’s (SJSU) Bay Area Environmental Science Institute (BAESI) about watershed science and human impacts that affect the Monterey Bay National Marine Sanctuary (MBNMS).</p> <p>20 lead teachers and 600 students per year will be involved in SPLASH! The total project cost is \$4983 per teacher a year. The total project cost is \$166.10 per student per year.</p>	Requested Funding: \$99,900

<p>Marin County Office of Education (Student &amp; Teacher MWEE)</p>	<p><b>“Marin’s Ocean and Bay Backyard (MOAB)”</b> - The Marin County Office of Education (MCOE) and partners are proposing to design and implement the professional development program, Marin’s Ocean And Bay Backyard (MOAB), for 4th and 5th grade teachers in the Novato Unified School District (NUSD) and the San Rafael City Schools Elementary District (SRCS).</p> <p>The project is driven by this question: “What is the impact of humans on Marin County’s coastal ecosystems?” Through the proposed three-year project, students, teachers, administrators, and local NOAA educators will experience and research answers to that question together through the implementation of Meaningful Watershed Educational Experiences (MWEEs) on the school site and the local school community. Participating teachers from Year 1 will take on leadership roles in Years 2 and 3 in order to provide a sustainable professional learning structure beyond the life of the grant.</p> <p>The proposed project will provide targeted professional learning necessary to bring place-based climate change education into student-centered, NGSS aligned classrooms. It will directly build upon the work from MCOE’s previous BWET grant, as well as three federal grants targeting science instruction, this project focuses on strengthening teacher connections to local environmental resources. so MWEEs can be iterative experiences for student sense-making in their content knowledge.</p>	<p>Requested Funding: \$100,000</p>
<p>Earth Team (Student MWEE)</p>	<p><b>“Aqua Team - Sustainable Youth Watershed Internships”</b> — The Aqua Team Watershed Internships will continue for another year with an immersive afterschool watershed education and stewardship program working directly with 56 underrepresented students, recruited as paid interns from four local Title 1 public high schools working with collaborating local creek groups and municipalities in the East Bay. Indirectly the program activities benefit 400 career academy/pathway students, eight teachers and the general public.</p> <p>The service-learning approach of the program will focus on watershed education, with multiple field research days and habitat restoration actions as well as community outreach/public component with presentation events. The project is leveraged by a four-year NSF award to Earth Team that promotes the use of GLOBE/NGSS science protocols to enhance informal STEM Learning and build capacity for engagement of diverse student populations in the environmental sciences, thus meeting COMPETES Act objectives. The program emphasizes ocean and climate literacy and focuses on hands-on learning and restoration activities in four local creeks adjacent to four participating high schools, documenting the impact of human activities on the health of watersheds and oceans and educating youth on climate change and the role of single-use plastic production on water pollution and greenhouse gases.</p> <p>Earth Team has implemented best practices in cultural relevancy in its program to adapt BWET to our interns, on average 80%+ youth of color and near 50% Hispanic/Latino: one of our most experienced BWET educators for all collaborating high schools is a native Spanish speaker born and residing in San Pablo. This greatly facilitates a learner-centered approach in the context of the local community and culture. The proximity of our BWET coaches to the culture and environmental perspective of the student population we serve increases student’s motivation and engagement, facilitating a better understanding on how the student’s daily actions, which are embedded in socio-cultural systems, have an impact on the natural systems.</p>	<p>Requested Funding: \$50,360</p>
<p>Greater Farallones Association (Student MWEE)</p>	<p><b>“Engaging Coastal Communities in Kelp Forest Recovery”</b> - Building on the accomplishments of our Year 1 B-WET grant, the Greater Farallones Association (Association) will continue developing kelp-focused Meaningful Watershed Educational Experiences and deliver them to four high schools across southern Mendocino, northern Marin, and inland Sonoma counties, to reach students in rural, geographically isolated areas with limited access to inquiry-based environmental education. One of California’s largest ecological crises, bull kelp forest die-off along the northern coast has impacted communities along the Sonoma-Mendocino coastline.</p> <p>Through proven educational programs like Fishermen in the Classroom and LiMPETS, 175-300 students will learn about their local intertidal and kelp forests habitats. At approximately \$157/student (including curriculum development, bus transportation, and evaluation), this project will connect students to kelp recovery through 2 interactive classroom lessons, 1 data analysis activity, and 3 unique field trips to the coast involving them in intertidal monitoring, kelp canopy mapping, and kelp restoration. The Association will also hold a professional development workshop for 8-10 participating teachers, and give teachers continuous support throughout the grant period.</p>	<p>Requested Funding: \$35,382</p>