Get WET in New England: Ocean Literacy through Watershed Education and Training

1. PROJECT SUMMARY

Organization: New England Aquarium (NEAq), partnering with three science centers. **Principal Investigator**: William S. Spitzer, NEAq, Central Wharf, Boston MA 02110, bspitzer@neaq.org, 617-973-6567. **Area of interest**: Professional Development for Teachers related to Meaningful Watershed Educational Experiences (MWEEs). **Project duration**: April 1, 2010-March 30, 2013. **Summary of work**: NEAq will lead members of the New England Ocean Science Education Collaborative (NEOSEC) to provide professional development (PD) grounded in Ocean Literacy (OL) Principles #5 and #6 and addressing goals of the NOAA Education Plan. Gundalow Company (NH), BOAT CAMP (MA), NEAq (MA), and Sea Research Foundation, Inc./Mystic Aquarium (CT) will train and support teachers to provide MWEEs for their students. We will serve at least 50 new middle- and high-school teachers per year during the first two years; 110+ new teachers over 3 years (and through them, approximately 4,700 students). Key personnel and NEOSEC members from existing New England (NE) B-WET grantees along with NOAA affiliates will serve on an Advisory Panel, ensuring alignment with NOAA priorities and coordination among NE B-WET projects, and opening avenues for joint recruitment and dissemination. **Primary Objectives**: Employing a collaborative project structure, ***Get WET in New England*** will generate greater impact than each partner could effect on its own. Participating teachers will benefit from each partner's unique expertise, opportunities to work with peers from other states, and connections with regional marine educator networks. We will generate a broad data set for robust external evaluation. *Year 1 (April 2010 -March 2011):* Engage 50+ teachers with PD to apply inquiry-based pedagogy that incorporates OL into the ongoing curriculum, implementing classroom activities and field experiences that utilize existing resources and align with state standards; gather for 3 meetings and build NE connections and NOAA partnerships to share and improve PD; present project at regional OL Summit. *Year 2 (April 2011 – March 2012):* Engage at least 82 teachers (50 new; approx. 30 from Year 1 continuing) with PD/ MWEEs revised and improved per formative evaluation results; support teacher presentations at regional NMEA chapter conferences; collect qualitative and quantitative evaluation data to assess effectiveness of PD and collaborative BWET approach. *Year 3 (April 2012 – March 2013):* Engage 74+ teachers (14 new) with continued support for teacher implementation of MWEEs (revised based on 2 years' evaluation); develop summative evaluation; publish MWEEs for multiple ecosystems and approaches. **Budget**: Federal funding requested Year 1: $**97,632**; Cost-sharing: **$10,300 in-kind** (salaries/ fringe benefits)**, $20,271 cash.** Project cost Year 1: **$128,203**; Cost per teacher in Year 1: $2,564; per student **$103 (**est.).

2. PROJECT DESCRIPTION

Get WET in New England (Get WET) will promote ocean literacy utilizing four unique watersheds: two in Massachusetts, and one each in New Hampshire and Connecticut. Partner institutions—Gundalow Company in NH (Gundalow); BOAT CAMP and New England Aquarium in MA, and Sea Research Institute, Inc./Mystic Aquarium (Mystic) in CT—will provide 3 days of professional development (PD) to 12+ middle/high-school teachers from their region each summer. With support from their PD provider, teachers will develop MWEE's, including a field trip, to conduct during the school year. Teachers will present their findings at regional marine educator conferences each year. Four NOAA representatives will be individually assigned to provide technical assistance to partners; NOAA Advisors will also serve on an Advisory Panel (AP), along with current B-WET grantees, to help develop, evaluate and disseminate the project. The AP and project leads will meet twice yearly, and results will also be disseminated within the New England Ocean Science Education Collaborative (NEOSEC). We will serve 114+ teachers and 4,700 students over 3 years. Partners will draw on their strengths as regional institutions collaborating through NEOSEC and already providing teacher PD. MWEEs will focus on riverine and coastal conservation, directly relevant to the North Atlantic Regional Team's Ecosystem Conservation Priority.

Goals and Measurable Objectives: Relevant NOAA Education Plan components are underlined within outcomes.

Goal 1. Establish a cohort of middle- and high-school teachers across New England who understand and apply MWEE pedagogy and principles in their classrooms.

- *Objective:* Combine expertise of geographically distinct NEOSEC partners to provide PD and follow-up support for teachers over 3 years. *Outcome:* Long-term teacher-institution connections <u>via structured formal education system</u>, <u>benefiting from the realm of informal education</u>.
- *Objective:* Apply methods for effective inquiry-based environmental science education, incorporating Ocean Literacy (OL) principles and existing data-rich resources. *Outcome:* Teachers successfully incorporate MWEEs into their curriculum, <u>drawing on regional and national data for inquiry and evidence-based activities</u>.
- *Objective:* Provide opportunities for teachers to participate in subsequent year PD and share with colleagues at annual conferences, providing evaluative feedback. *Outcome:* Teachers show confidence in developing activities and implementing their field trips with tools <u>consistently improved based on external evaluation</u>, which <u>connect students to nature and promote environmental stewardship.</u>

<u>Goal 2</u>: Help teachers implement MWEEs that examine watershed and coastal ecosystems and conservation efforts.

- *Objective:* Help teachers align OL Principles and coastal science with curriculum standards. *Outcome:* Teachers apply curricula that are aligned with state education standards, and anchored in OL Principles
- *Objective:* Train teachers to utilize local, regional, and national data sources, and to guide student monitoring using appropriate, basic technology and equipment. *Outcome:* Students experience site-specific field studies within the context of differences over time and across project sites.

Goal 3. Increase capacity of partner institutions for teacher PD and MWEE development and delivery.

- *Objective:* Develop strong NOAA-institution partnerships through Advisors assigned individually to each partner and meetings that bring partners together with Advisory Panel. *Outcome:* Multiple partners understand and incorporate NOAA education principles and NART priorities, maximizing federal investment.
- *Objective:* Enhance PD through cross-partner exchange of expertise and external evaluation. *Outcome:* Partners participate in one another's PD and provide training that meets their participants' needs.

Goal 4. Expand/ strengthen regional connections for partners, sharing replicable activities and high-quality products.

- *Objective:* Gather for three annual meetings and leverage NEOSEC connections with joint reports to colleagues. *Outcome:* Increased interconnections among institutions providing inquiry-based teacher PD.
- *Objective:* Meet and share findings at biennial Ocean Literacy Summit and marine educator conferences; publish findings and products. *Outcome:* Regional awareness of and feedback on projects and results.

Program Content: Our PD offering will focus on Ocean Literacy (OL) Principles #5 (the ocean supports diversity of life and ecosystems) and #6 (the ocean and humans are interconnected). These Principles offer numerous opportunities for teachers to make connections for students and generate interesting activities. Project partners will draw on multiple NOAA resources available as supporting materials, especially the Ocean Exploration Curriculum, National Estuary Research Reserve curricula and activities, and the evolving estuaries.gov website. In addition, we will train teachers to use NOAA buoy data for points of comparison.

Table 1 (below) provides an overview of partners' contributions. We will focus training on the OL Principles in site-specific contexts, drawing on data from this project and online resources to help teachers compare regions. Partners will provide individual support to help teachers implement MWEEs for their students that incorporate in-class and outdoor activities aligned with state standards. With further support, teachers will share their results at annual conferences as well as with new participants in subsequent years of the project. NOAA Advisors will join partner agencies for yearly planning and formative evaluation meetings and may attend teacher

presentations. Through email, conference calls, and online collaboration, the Advisors will provide ongoing support to their assigned partner. Each partner institution will incorporate their PD and MWEE work with teachers into ongoing program offerings, and thus will sustain the work under other funding sources, including fee-for-service.

Table 1.
Get WET Project Partners: contribution(s) to joint PD, MWEE site specifics, audience, and NOAA Advisor.

Partner Institution	**Expertise contributed**	**Watershed & Bay**	**Field experience**	**Audience**	**Audience numbers***	**NOAA Advisor**
Sea Research Foundation	Student-constructed H_2O sampling equip.	CT River & Long Island Sound	Freshwater & coastal monitoring	Urban middle schools	12T, 300S year 1&2; 24T, 900S est. total	CT Sea Grant
New England Aquarium	Science stds & frameworks; inquiry methods	Quincy Bay estuary, MA	Coastal monitoring	Urban middle schools	12T, 300S year 1&2; 24T, 900S est. total	MIT Sea Grant
BOAT CAMP (community-based)	Language and visual arts	Merrimack River & Ipswich Bay	Ship-board monitoring	Urban high schools	12T, 300S year 1&2; 24T, 900S est. total	Waquoit Bay NERR
Gundalow Co. (community-based)	Interdisciplinary research methods	Piscataqua River & Great Bay, NH	Ship-board monitoring	Rural middle schools	14T, 300S per year; 42T, 1350S est. total	NH Sea Grant

* T=teachers; S=students

Planning and Evaluation *(See **Table 2** below for project timeline.)*: The project will begin in Spring 2010 with the first planning meeting. Attendees will include 1) the four partners; 2) NOAA Advisors—each assigned to advise one partner as well as the project as a whole—Joan Muller (Waquoit Bay National Estuarine Research Reserve - WBNERR), Diana Payne (CT Sea Grant), Mark Wiley (NH Sea Grant) and Sarah Olivo (MIT Sea Grant); 3) New England (NE) B-WET Project Advisors (current grantees) and NEOSEC Governing Council members Lauren Rader (Project Oceanology - Project O) and Justine Glynn (Gulf of Maine Research Institute - GMRI); 4) project director Pam DiBona and PI William Spitzer (NEAq); 5) communications coordinator Catherine Cramer; and 6) the evaluator, Program Evaluation Research Group at Lesley University (PERG). *(See attached letters of support.)*

The goals for this meeting will be to: 1) receive first-hand guidance from NOAA staff in meeting the goals of the agency's Education Plan and regional priorities in the North Atlantic Region; 2) finalize agendas for 3-day PD workshops at each institution, including cross-commitments by partners to co-teach segment(s) of workshop(s) offered by other partners; and 3) confirm requirements for teacher participation in line with compensation provided and evaluation data needed, including a field trip, pre- and post- trip activities, student products, and presentation at a regional educator conference: Gulf of Maine Marine Educator Association (GOMMEA), Southeast New England Marine Educators (SENEME), or MA Marine Educators (MME).

Project Director Pam DiBona and Communications Coordinator Catherine Cramer will leverage NEOSEC resources to help partners recruit teachers. Partners will collaborate to develop common resource materials.

Table 2.
Get WET Process Timeline

Month	Activity	Lead	Participants	Goals	Deliverables/milestones
April - May	Planning mtg and follow-through	Project Director	PI, Partners, Comm. Coordinator, Evaluator, Advisors	Form PD agendas; set call-back plans	Final workshop agendas, recruitment materials
June - Aug	PD workshops	Partner institutions	Teachers, Partner leads	Implement PD with cross-region coordination	Teachers ready to implement MWEEs using effective pedagogy & content
July (Y2)	Formative mtg/ pres'ns at NMEA conference	Project Dir./ Comm'ns Coordinator	PI, Partners, Evaluator, Advisors	Disseminate and gain feedback	Incorporate into following year program design and implementation
Sept. - Nov.	MWEEs: field trips, pre- & post- activities	Project partners, teachers	Teachers, students	Continue PD for teachers/MWEEs for students	Students introduced to field work/ exposed to OL principles/ concepts
Oct. (Y2,Y3)	Teacher presentations at NMEA chapter mtgs	Comm'ns Coordinator	Teachers, Partners, Advisors (opt.)	Present success, challenges	Teachers pres'ns, regional connections with peers
Nov. (Y1,Y3)	Formative mtg/ presentations at OL Summit	Project Dir. / Comm'ns Coordinator	PI, Partners, Evaluator, Advisors	Disseminate and gain feedback	Progress reports, partner pres'ns to peers, formative evaluation, publications
Dec. – March (Y1,Y2)	Call-back session(s)	Project partners	Teachers, Evaluator, Advisors (opt.)	Evaluate teacher success, student deliverables	Formative and summative evaluation
Feb. (Y3)	Final joint teacher workshop	Project Dir., Partners	Teachers	Share experiences / plan future efforts	Project wrap-up and report, publications.
March (Y1,Y2)	Wrap-up meeting	Project Dir., Evaluator	Partners, comm.. coordinator	Review past year, share lessons learned/ effective practices	Report to Advisors and funder, assemble evaluation data

During yearly planning meetings in Spring 2011 and Spring 2012, we will draw on evaluation data to revise the program plan, and change the workshop agenda(s) and recruitment strategies as suggested.

Professional Development and MWEEs *(See attached Curriculum Plans)*: Starting in summer 2010, each partner institution will provide 3 days of PD for 12 or more teachers. An educator from each partner institution will provide training for one segment of at least one other partner's workshop. In this way, we will draw on each institution's unique expertise, deepen teacher-participants' experiences, and build each partner's capacity. All partners will begin their PD with two full days of teacher training. All workshops will provide time for teachers to begin developing their own MWEE-related classroom activities, which will lead up to and build on the student field trip. NEAq will bring teachers into the field for a third day of training, instructing them in the best means for engaging their own students outdoors, and providing $100 MWEE support funds which can be spent on supplies, NEAq education staff assistance, or field trip transportation.

Partners will then continue supporting teachers via email, phone, and in-person meetings as they prepare activities and plan field trips. In Fall 2010, teachers will bring their students into the field. Gundalow, BOAT CAMP, and Mystic will provide their third day of PD while accompanying teachers and their students into the field, modeling the pedagogy. Partners will offer teachers support and resources, including stipends, continuing education credits, and/or graduate credit. In the fall of Year 2, 2011, new participants as well as teachers from prior year(s) will be encouraged to carry out MWEEs with ongoing support, and to share results with their peers. Gundalow will recruit new teachers for Year 3, fall 2012, and other partners will continue supporting teachers from previous years.

Dissemination: In fall 2010 and 2012, partners will present their work to a regional audience at NEOSEC's biennial OL Summit. In the past, Summits have attracted more than 150 attendees. During the Summit, partners and Advisors will hold a check-in meeting to share challenges and successes. In 2011, partners and Advisors will gather at the National Marine Educators Association (NMEA) conference in Boston. Each winter, partners will sponsor participating teachers' attendance and presentations at annual meetings of NMEA chapters, including GOMMEA, MME, and SENEME (*letters of endorsement attached).* At these meetings, partners will hold joint call-back workshops to gather evaluative feedback from teachers (using surveys provided by our evaluator) about their experiences and their students' responses. Advisors will be invited to attend to hear directly from the teachers. Project partners will report on successes and challenges during quarterly NEOSEC membership meetings, at the OL Summits, and at the NMEA meeting, offering insights and guidance for other members that provide PD, and encouraging others to incorporate MWEE pedagogy into their program offerings.

Partner Support from NEOSEC: *Get WET* promises benefits beyond what could be achieved by a set of single-grantee projects. In this collaborative model, NEOSEC (staffed by Project Director DiBona)—with its established network—is poised to disseminate lessons learned, results, and products within the Gulf of Maine, around New England, and beyond. In addition to the project partners, more than 12 other NEOSEC members offer teacher PD. Through the AP, the project partners will gain more structured access to NOAA expertise and resources than otherwise possible, and will be able to share resources among programs and with teachers more effectively. Central support for evaluation/ communications and grant management will allow partners to focus on what they do best: provide meaningful educational experiences. This project will draw on the following NEOSEC resources:

1. Program framework that incorporates Ocean Literacy. The mission of NEOSEC (http://neosec.org) is "to leverage New England's extraordinary assets to engage the public in understanding the vital connections between people and the ocean." NEOSEC has been instrumental in bringing the OL Principles to New England through its biennial Ocean Literacy Summit; a public outreach campaign (*Ocean7 Voyage of Discovery*) which places the OL Principles in more than eight public sites around New England; and ongoing sharing of messaging and best practices among member institutions through quarterly meetings and an active committee structure. Our 2010 OL Summit is to focus on Principle #5 – the ocean supports diversity of life and ecosystems – and MWEEs developed for this project will be a highlight, along with the Census of Marine Life's 10-year report on their efforts.

2. Program support that incorporates NOAA's Education Plan and NART priorities. *Get WET's* Advisory Panel, chaired by *Get Wet* PI Spitzer, will include the four NOAA Advisors and the two current NE B-WET grantees (Project O and GMRI). Each NOAA partner will also be a technical Advisor to one *Get WET* partner. The AP will: 1) ensure that the program meets specific NOAA goals and objectives, and promote/connect funded programs with NOAA resources to meet these objectives, 2) represent NEOSEC's Governing Council to ensure its mission and goals are supported, and 3) maintain effective communication and collaboration among NEOSEC member institutions to share lessons and products of *Get WET* across the region.

3. Intra-network communications and joint outreach products, including recruitment materials, publications, pages on neosec.org, and interactive tools using emerging technologies as described in NOAA's Education Plan. Project director DiBona and communications coordinator Cramer will work together to identify and develop value-added joint projects, such as a common set of resource materials for participating teachers.

4. External communications. As communications coordinator for NEOSEC as well as for the proposed project, Cramer will provide ongoing access to the growing NEOSEC network through the electronic newsletter *NEwswave*; NEOSEC's website (neosec.org); and a *Get WET* blog, wiki, or Base Camp account. Cramer will also coordinate *Get WET* strands for partner presentations at NEOSEC's Ocean Literacy Summits in 2010 and 2012, the NMEA annual conference in 2011 (hosted by MME), and New England NMEA chapter meetings.

3. ORGANIZATION AND PERSONNEL

NEAq is uniquely able to coordinate and enhance activities of this proposal's collaborating partners. NEAq hosts NEOSEC, providing staff support to its more than 30 members, which include ocean science educators (formal and informal), scientists, and facilitators dedicated to ocean literacy. NEOSEC is a robust network and collaborates in a

spirit of inclusiveness, tapping into the wealth of ocean resources in the region. The diversity of professional expertise, resources, locations, and audiences represented by NEOSEC enables us to facilitate strong connections between New England scientists and educators. NEAq has also played a leadership role in the Centers for Ocean Science Education Excellence-New England (COSEE-NE), promoting OL principles and activities complementary to this proposal.

Project Personnel *(see attached resumes)*

Principal Investigator: William Spitzer is VP for Programs, Exhibits, and Planning at NEAq. He is PI for COSEE-NE, and leads membership development for the COSEE National Network Advisory Committee. He has 20 years experience developing and implementing science education programs.

Project Director: Pam DiBona, Project Manager at the New England Aquarium, will manage all aspects of the *Get WET* project, including program support for grant requirements, budget reporting, and information-sharing. DiBona brings 20 years of experience in building and maintaining networks in the environmental field as well as strong project management skills. She currently coordinates all collaborative activities for NEOSEC.

Communications Coordinator: Catherine Cramer has written and edited numerous articles and papers on marine science and oceanography topics since 1997. She is also Communications Coordinator for the National COSEE Network and NEOSEC. In those roles, she edits two e-newsletters, a blog, and provides content for the national cosee.net and COSEE-NE websites. These connections provide ready access for NEOSEC partners to resources and program participants. *(See attached letter of support.)*

Evaluation Consultant: The Program Evaluation Research Group at Lesley University (PERG) specializes in in-depth qualitative evaluation methods, combining fieldwork with systematic data collection for formative evaluation purposes; and observations, interviews, and other documentation to monitor activities and develop summative evaluation. Carol Baldasari of PERG will be our consultant for this project; she has evaluated COSEE-NE and NEOSEC's formation, and thus has a unique and valuable perspective. *(See attached letter of support.)*

4. PARTNERSHIPS

The *Get WET* institutions are leaders in their communities and closely tied to local school districts. All are nonprofits dedicated to advancing Ocean Literacy (a criterion for NEOSEC membership) and excellence in environmental education. *(See attached letters of support and endorsement.)*

New England Aquarium. Public school district connection: Quincy, MA. NOAA Advisor: MIT Sea Grant. Project Leader: Jayshree Oberoi, Teacher Services Supervisor at NEAq, has been helping educators develop their environmental science knowledge and teaching skills for more than 10 years. During her five years at NEAq, she has designed and implemented professional development programs for K-12 teachers, focusing on aquatic environments. Prior to this, Oberoi ran teacher training programs for the Worldwide Fund for Nature in India, where she also received her Masters of Science in Zoology from the University of Pune.

BOAT CAMP. Public school district connection: Haverhill, MA. NOAA Advisor: WBNERR. Project Leader: John O'Leary, coordinator of BOAT CAMP Inc.'s marine education curriculum, has taught ship-board since 1998 and in the classroom for 25 years. He has a B.S. in Marine Biology from UMass Dartmouth and a Masters Ed./Technology in Education from Lesley University. He is certified as an Instructional Technology Specialist for K-12, Biology for grades 7-12, and Elementary Science for grades 1-6. He has also worked as a teacher trainer.

Gundalow Company. Public school district connection: Portsmouth, NH. NOAA Advisor: NH Sea Grant. Project Leader: Molly Bolster is Executive Director of Gundalow. She brings 20 years of marine education experience to the role, including ship-board and field education in informal education settings such as Mystic Seaport Museum, Living Classrooms Foundation, and R/V Westward. She holds a B.A. from Bowdoin College.

Sea Research Foundation, Inc.: Public school district connection: New Britain, CT. NOAA Advisor: CT Sea Grant. Project Leader: Katie Cubina is Vice President and Executive Producer for Immersion Learning, a division of Sea Research Foundation (which also includes Mystic Aquarium and the Institute for Exploration). Cubina holds an advanced degree in science education, and brings over 15 years of experience in education, management, and work with youth-serving agencies.

Advisors Diana Payne (CT Sea Grant), Joan Muller (WBNERR), Sarah Olivo (MIT Sea Grant) and Mark Wiley (NH Sea Grant) will serve as NOAA Technical Advisors and as members of the Advisory Panel, helping ensure that NOAA and Ocean Literacy goals are met through their respective programs and assisting with communication among NEOSEC members. NE B-WET representatives Lauren Rader (Project O), Justine Glynn (GMRI), and Joan Muller (WBNERR) will provide cross-regional connections among B-WET grantees and increase the potential for leveraging institutional and agency resources.

5. OUTREACH AND EDUCATION

Communications coordinator Cramer will facilitate outreach and education efforts. Primary among these is

NEOSEC's above-mentioned communications tool, the bi-weekly e-newsletter *NEwswave*, which reaches 1,000 subscribers—ocean science education professionals in New England and nationwide. Cramer assisted COSEE-NE participants in writing and publishing curricula in the National Science Teacher Association (NSTA) publication *Science Scope*, and will pursue similar publications for this project. *Get WET* PD and MWEEs will be presented at several larger forums, including NEOSEC's OL Summit in 2010 and 2012, the Annual NMEA conference in 2011, and state and local forums as appropriate (e.g., Boston Harbor Educators' annual conference and NSTA chapter meetings). Teachers will be encouraged to present at one or more of these forums as part of their participation in the project. Finally, the *Get WET* project director and communications coordinator will provide support to partner leads in a variety of outreach methods, such as providing *Get WET* information to NEOSEC members, and announcing and attending meetings of regional associations and committees with connections to ocean science education.

6. BENEFITS AND RESULTS EXPECTED

Our external evaluation program will help us gauge progress on the following anticipated benefits and results:

114 teachers from Connecticut to New Hampshire will understand, embrace, and integrate MWEEs into their regular curriculum. Our regional partnership will enrich PD and ensuing classroom implementation as partners contribute their expertise to one anothers' training. Teachers will understand OL Principles #5 and #6, and learn effective pedagogy for communicating these Principles. They will know how to connect the Principles and their MWEEs to their state curriculum standards. They will use the breadth of resources available, including assistance from informal education experts, materials from NOAA, and site-specific data. They will describe and discuss their projects with other teachers at conferences and joint call-back sessions, strengthening their connections to peers and formalizing long-term ties with PD partners. In the first year alone, through participating teachers, more than 1,200 students will be exposed to MWEEs each year. Adding 50 new teachers in year two, and assuming 30 or more teachers from years one and two of the project continue to implement their MWEE in subsequent years, the project will reach close to 4,700 students during the three-year project. *(See **Table 3,** below)* While this project focuses on PD rather than student outcomes, we are confident that students will be exposed to science in the field, observe environmental diversity, and begin to understand their own connection to their local ecosystem resources.

Partner institutions will increase their capacity to prepare and support teachers in implementing MWEEs, drawing on results of formative evaluation to meet participants' needs. Yearly meetings with the AP will help partners incorporate NOAA education principles not only into this project, but into other programs as well.

Our colleagues in NEOSEC will benefit from this project when we share replicable activities and high-quality projects at quarterly meetings and our biennial OL Summit. Per-student cost is estimated at $103 in the first fiscal year; per-teacher cost is $2,564; if 4,700 students are reached, per-student cost over the life of the grant is $86.

Table 3.
Estimated teachers and students served.

	New teachers served	Students served (approx. 25/teacher)	Est. teachers continuing MWEEs	Students served by continuing teachers	Total est. teachers served cumulatively	Total est. students served cumulatively
Year 1	50+	1,250	--	--		1,250
Year 2	50+	1,250	30+	750	80	3,250
Year 3	14	700	30+	750	114	4,700

7. BUDGET JUSTIFICATION

The *Get WET* budget includes funding for overall direction and management by staff at NEAq and consultants to ensure professional communications, evaluation, and project coordination. Partner institutions will receive funds to participate in yearly planning meetings, implement PD for teachers each year, and support teachers in implementing MWEEs with appropriate activities. Advisors will attend two meetings per year in Years 1 and 2, and a single meeting in Year 3; all Advisors will be reimbursed for travel but will volunteer their time for meetings and assistance to their assigned partner. A detailed budget narrative is attached.

8. NEED FOR GOVERNMENT FINANCIAL ASSISTANCE

The proposed project will provide professional development and ongoing support to teachers free of charge. We rely on foundation, corporate and individual support to provide mission-based educational programs. Should this project receive NOAA funding, we will pursue additional funding beyond year 3 as the project is incorporated into partners' regular offerings—whether through new grants, fee-for-service, or other revenue sources.

9. PROJECT EVALUATION

The Program Evaluation and Research Group at Lesley University (PERG) will serve as the external evaluator. PERG will work in collaboration with lead project staff to design a plan that will provide timely feedback for both formative and summative purposes. The work will focus on key elements of: 1) partners' design, development, and implementation of the workshops and follow-up support for teachers, 2) participant learning, 3) teachers' MWEE implementation and classroom activities over the grant period, and 4) partners' and participating teachers'

presentations and dissemination of their work. Project Director DiBona will liaise between the evaluator and partners to ensure a smooth process, and will coordinate *Get WET* participation in the national B-WET evaluation.

Evaluation Questions

1. Do partner institutions design and develop planned workshops, recruit interested teachers, and implement the program as planned? How do they support teachers' efforts to develop and use MWEEs in their classrooms?
2. Are the workshops effective? Do teachers gain a greater understanding of NOAA's education principles and the MWEE pedagogy as a result of their participation? Does the program strengthen teachers' knowledge of local ecosystems and inquiry approach?
3. How many teachers who attend the workshops actually create and use MWEE-related curriculum materials and instructional approaches in their classrooms over the 3 years of the project?
4. How effective is the project's proposed dissemination strategy? What is its reach?
5. Has the program affected the capacity of the partnering institutions to provide teacher PD surrounding MWEEs? Have the connections between the partner institutions been strengthened?

Data Collection Methods: PERG evaluators will provide the PI and project team members with formative data for the purpose of ongoing program improvement, as well as summative data for assessing program outcomes. Initially, PERG will work with the project team to identify key indicators of success during their initial planning meeting. Evaluators will observe some workshop events as well as call-back sessions. Paper and/or online surveys will be used to assess whether the workshops contribute to teachers' knowledge and skill development, and to ascertain their intention to develop classroom experiences that engage students in MWEEs. Teachers' curriculum summaries will be collected by the project team. Evaluators will send an annual survey to teachers one year after their participation in the workshop, as well as the following years of the grant period, to determine if and how teachers used MWEEs in their classrooms. Project staff will create a database listing teachers' presentations at conferences and at the summit. Annual interviews with partner PD staff will be conducted to collect data on whether and how the program is contributing to individual participants' PD delivery skills.

Reporting: Evaluators will attend yearly wrap-up meetings to provide summaries of participant survey data and discuss findings, and prepare summative reports for NOAA as required.