

Bringing Back the Eastern Oyster

The "Bringing Back the Eastern Oyster" was a restoration effort to enhance the near decimated Chesapeake Bay oyster bars, with particular emphasis on the Patuxent River region. Students assisted staff scientists in creating oyster habitat and in releasing healthy oyster larvae onto designated oyster bars in the Patuxent River.



Best Practice 1: What recognized community need was met by your project? The recognized community need that was met by the various work-study activities of the "Bringing Back the Eastern Oyster" project included both education and environmental. Participating students were educated on the ecology and restoration of the Chesapeake Bay's oyster reefs. In addition, the aquatic environment of the Bay was directly improved through the student's oyster restoration actions. The Chesapeake Bay's renowned oyster industry virtually collapsed in the late 1980's, although landings had been gradually declining for nearly a century. From harvests exceeding 15 million bushels from Maryland waters in the mid 1880's (when the Bay's oyster bars were heavily exploited by sailing schooners), landings have plummeted to well under 75 thousand bushels a year. Although over harvesting contributed to the demise of the fishery, oyster diseases have exacted a more recent and devastating toll. Since 1987, *Perkinsus marinus*, the agent of dermo disease, has been the most important pathogen of the eastern oyster, *Crassostrea virginica*, along the central east coast of the United States. Initial studies by scientists of [The Academy of Natural Sciences' Estuarine Research Center \(ANSERC\)](#) indicate that *P. marinus* infections continue to persist tenaciously throughout the entire Patuxent River and lower oyster beds with healthy oysters is an important and effective method in establishing the once plentiful oyster populations in the Bay. In addition, public awareness and participation in the restoration of the oyster population is a vital key in maintaining a healthy environment and instilling a sense of ownership in the Bay's ecosystem. Students of the Southern Maryland region gained a better understanding of the benthic community of an oyster reef, and the estuary as a whole. While learning about oysters and creating important reef habitat for oyster young, students were able to see and learn about things such as adaptations of organisms associated with the oyster reef community. The students participating gained a sense of personal responsibility for the health of the oysters and other animals in our Patuxent River. By taking an active role in this effort, the students understand the important issues that affect the Chesapeake Estuary, as a whole. For example, riparian buffers and wetlands can reduce and slow nutrient and sediment run off, thus improving water quality. An improvement in water quality may lead to an improvement in the health of the oysters and Bay. The need for protection or reestablishment of effective natural buffers between land and water became evident to the students involved in this oyster restoration project. The involvement of hundreds of students and teachers in this restoration project has served as a model for family members and peers, thus encouraging others to lend a hand in the protection and restoration of our precious estuarine resources.

Best Practice 2: How was the project connected to the school curriculum and curricular objectives? Our "Bringing back the eastern oyster" project was designed in conjunction with the Calvert County Public Schools to assure that program outcomes were supporting overall system goals. This experience is directly related to the student indicators and outcomes outlined by Maryland Department of Education's School Performance Assessment Program, which now requires all students to have a unit on the ecology of the Chesapeake Bay.

Best Practice 3: How did participants reflect on their experiences throughout the project? The success of this project rested on the effectiveness of ANSERC's relationship with the students involved. Without the hard work and dedication of these individuals, this project would not have been possible. To evaluate the success of this project, surveys were mailed to all teachers and students that participated in this project. All participants who responded expressed their views on the project as being a very positive and educational experience. An experience they would

agree to do again. In addition, informal interviews with the teacher and students were of value in determining the success to visit ANSERC on other occasions for additional field trip activities and restoration and service learning projects. Teachers whose classes participated also saw high MSPAP scores and a greater understanding of scientific processes. Several of the students who were involved in the project returned to ANSERC to attend summer programs. We feel that this project involved students who are not only interested in participating and learning more about the Chesapeake Bay, but also in spreading the word and involving neighbors and friends.

Best Practice 4: How did students take leadership roles and take responsibility for the success of the project?

Many of the students that worked on this project, did so independent of teacher supervision through direct service with ANSERC staff scientists. After explaining the goals of the project and their responsibilities, the student immediately became excited and involved with the restoration project. Many of the students then went back to their schools and homes to educate their peers and family on the importance of a healthy Bay. Some students also participated in advocacy activities by creating posters and letters to assist in accomplishing the task of informing the community of this project. The students and teachers also remained in contact with ANSERC through our newsletter and email to follow the success of the project.

Best Practice 5: What community partners were worked with on this project? * Baltimore Gas & Electric * Calvert Co. Board of Education * Calvert Co Department of Natural Resources * Chesapeake Bay Trust * Davenport Family Foundation * MD.. Department of Education * MD. State Department of Natural Resources

Best Practice 6: How did you prepare and plan ahead for the project? The Education Coordinator with assistance from ANSERC staff scientists designed the overall project goals and plan, as well as obtaining funding and support from various organizations. The Education Coordinator then worked with members of the Calvert County Board of Education to ensure that this service-learning project met the curriculum goals of the school system. Communication with area schools and teachers was established to initiate the project. Then, through mailings to teachers and word of mouth, students participated in the project during the spring, summer and fall season.

Best Practice 7: What knowledge and skills did students develop through this project? As participants in the "Bringing Back the Easter Oyster" service-learning project, students gained a wide range of knowledge and skills. Students learned through hands-on activities about oysters, the factors that influence their growth and mortality, and about how water quality can influence organism growth and survival, and the impact of disease and human activities upon oyster populations. The service aspect of this project helped not only to educate them, but also gave the students first hand experiences in scientific research. The students left the program with the satisfaction of assisting The Academy's scientists in their efforts to bring back the oyster to the estuaries of the Chesapeake Bay, as well as helping to improve the Bay itself.

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