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[<Back](#)

Statement I: Project Description

Students at Mandarin High School are currently involved in a project to construct concrete artificial reef modules known as Reef Balls, which are designed to mimic natural coral heads to enhance the reef system in the waters off Jacksonville. The primary focus of the project is the actual construction of the Reef Balls; however, the secondary goal is to teach students how to collect data underwater as certified scuba divers through our Scuba Explorer Post. This data will be used by the Florida Department of Environmental Protection in its fisheries management efforts to determine the effectiveness of artificial reefs and their impact on fish populations.

The students at Mandarin High are creating reef structures that will be added to a location offshore Jacksonville at a state-permitted site known as Bunny's Web. This site is located approximately 5 miles offshore in 55' of water. All students will learn the basics of water quality analysis and fish identification. However, for those students who become certified divers, they will actually dive on the reef to collect the data and do an underwater video documentary on the progress of the reef for at least the next five years. These videos will be used to assess the productivity of the reef as it develops into a mature reef system. Our goal is to purchase video equipment and IO sets of dive gear that can be used by future students. This reef, which will be providing habitat for many marine organisms, will also serve as a one-of-its-kind research reef that will be used by students, not only from Mandarin High School, but several other area high schools, as well as by students enrolled in Jacksonville University's Marine Science program.

This project is unique in several ways: Foremost is the tremendous amount of community involvement this project has generated. From the materials necessary for construction, to the transportation of the Reef Balls to the offshore site, many businesses and marine related interests have already donated substantial amounts of their resources and/or time. Additionally, this is the first reef of its kind in all of Northeast Florida to be constructed of materials built specifically for fish habitat as opposed to "materials of opportunity", which DEP has stated will no longer be used.

Statement II: Benefits to Students

This project has already directly benefited 185 students. These students have been or are currently enrolled in the Marine Science I and 11 classes and/or the Reef Research classes at Mandarin High School over the past two semesters.

The project will improve student learning in a number of ways:

- > Increased knowledge about natural reef ecosystems and artificial reef technologies
- > Increased awareness about the environmental conditions of reef systems worldwide and

locally

- > Provide students the opportunity to actually construct a product that benefits not only the environment, but the community as a whole (fishing, diving, hotel, restaurant, marina and boating industries in particular)
- > Provide students the opportunity to develop working relationships with other students and the community on a project that goes beyond the confines of the normal classroom setting
- > Provide students the opportunity to accept leadership roles in a group activity that must meet stringent deadlines
- > Allowing students to coordinate materials and community resources to achieve a common goal within a prescribed timeline requires that they establish relationships with community resources outside the schools normal capabilities
- > Provide students the opportunity to seek alternate funding sources to continue their efforts by learning the basics of grant writing, which improves their communication skills

The effectiveness of the program will be evaluated primarily by:

- > charting the increase in the number of students who enroll in degreed programs in post-secondary education majoring in marine or environmental science
- > the quantity and quality of data from the water quality analysis, fish counts and underwater video documentation of the reef as it matures over the next several years for the Florida DEP artificial reef database
- > improvement in writing and communication skills in a real-world application for possible funding

Statement III: Use of Funds Alex C. Waters III

Current Use:

Description: Cost:

Bi-monthly concrete pours for 1 school year \$1,000.00

Purchase of 5 Reef Ball molds \$1,000.00

Subtotal \$2,000.00

[<Back](#)