

LIFE:

Choctawhatchee Bay Watershed



Interim Report

NOAA Coastal Service Center Gulf of Mexico Alliance

DISL Number: 2303JD-FDEP OEE-01

Grantee: Florida Department of Environmental Protection/Office of Environmental Education

Project: LIFE-Choctawhatchee Bay Watershed

Period: April 1, 2010 – September 30, 2010

Location: Okaloosa County, FL

Project Managers: Gregory Ira, Todd Brackin, and Brittany Gray

Date: September 30, 2010



Destin Middle School Students carefully take measurements to calculate the slope of the beach at Henderson Beach State Park during Field Experience II.



Shoal River Middle School students taking notes during the "Gulf Shoreline" lab at Henderson Beach during Field Experience II.



A student from Destin Middle School examines samples of sand to compare the grain size, shape, and color during the "Gulf Shoreline" lab. (Field Experience II)



Two students from Destin Middle sifting sand through a nested sieve during the “Sand Systematics” lab at Henderson Beach during Field Experience II.



During the lab, “Classifying Plants: Plant Types,” Shoal River students pause to record a GPS waypoint on the Dune Trail. (Field Experience II)



This Destin Middle School student is timing the waves at Henderson Beach State Park to measure the wave frequency as part of the “Gulf Shoreline” lab. (Field Experience II)



Results/Progress:

The LIFE-Okaloosa Program has served a total of 334 students (150 during year one and 174 during year two). A total of six teachers during year one and five teachers during year two were served by the project. The project initially identified 100 students from each of the two schools to participate in the program during each school year. However, as a result of absences and other factors, less than this number actually participated in the field experiences and completed pre- and post-tests.

Four field experiences, two during the 2008-2009 school year and two during the 2009-2010 school year have been completed: two at Fred Gannon Rocky Bayou State Park and two at Henderson Beach State Park. All of the labs conducted were created from the feedback submitted by the teachers via the Scope and Sequence Matrix, which they were asked to complete.

The LIFE-Okaloosa Program has sponsored independent teacher professional development activities, such as Wonders Of Wetlands (WOW) and Great Explorations in Math and Science (GEMS) workshops, and facilitated four field experiences during this reporting period.

During year two of the project, both schools participated in World Water Monitoring Day on September 18, 2009. SRMS participated in WWMD again this year on September 17, 2010. DMS will be participating in their WWMD the week of September 27, 2010 (<http://wwmd.wsol.net/outpost/map.aspx>)

Parameters tested and recorded include temperature (air and water), turbidity, pH, and dissolved oxygen. Both schools are also continuing to participate in GLOBE activities - monitoring meteorological data with school weather stations, as well as conducting the long-term water quality monitoring on campus. The data that are collected are also uploaded to the schools' profiles on the GLOBE [web site](#).

Problems/Sources of Error:

There have been no problems encountered with the LIFE-Okaloosa Program during the current reporting period. In the original proposal we targeted 200 students to be involved in the program each year. Due to absences and other factors explained below, less than this number actually participated in the field experiences and completed pre- and post-tests. In order for Destin Middle School students to be involved in the program, science teachers at the school have developed an essay contest that determines what students will participate in the field experiences.

Is the project work on schedule?

Yes, based on our timeline, the project is on schedule.

Monitoring and Maintenance Activities:

The project monitoring consists of two levels of assessment: 1. Pre- and Post-tests, 2. Online Survey. The pre- post-test measures learning gains (cognitive) and the surveys measure attitudes and behaviors (affective). The pre-post test given to assess Field Experience II at Henderson Beach State Park (April 26 – May 6, 2010) is attached.

Pre and Post Test Results:

Pre- and post-tests from all field experiences held are shown below, with the results from the current reporting period highlighted. Mean pre-test scores were 4.83 and 4.36 for SRMS and DMS, respectively. Average post-test scores were 7.18 for SRMS, and 6.46 for DMS. Students from both schools improved their test score by an average of over 48%, pre- to post-test, and more than 74% of DMS and 82% of SRMS students improved their test score, pre- to post-test.

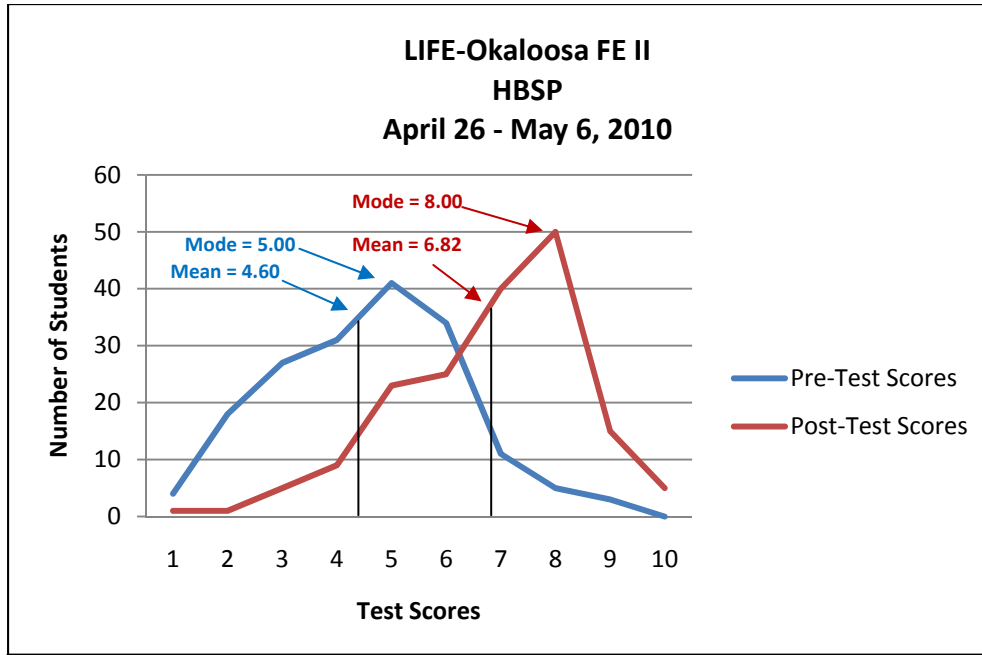
Summary of Pre- Post-Test Results: April 2010 – September 2010

School and Field Experience	Number of students*	Average Pre test score (out of 10)	Average Post test score (out of 10)	Difference (avg. Post – avg Pre)	% Change (avg post – avg pre)/avg pre x 100	% of students scoring \geq 80% on post-test	% of students that raised score (pre to post)
Shoal River (FE I)-Fall 08	72	5.64	7.39	1.75	31.03	58.33	66.67
Destin (FE I)-Fall 08	84	6.46	7.83	1.37	21.21	70.23	69.04
Shoal River (FE II)-Spring 09	74	5.12	7.03	1.91	37.30	41.89	74.32
Destin (FE II)-Spring 09	76	5.11	6.57	1.46	28.57	28.95	67.11
Shoal River (FE I)-Fall 09	99	5.12	7.02	1.90	37.11	41.41	80.81
Destin (FE I)-Fall 09	73	4.67	6.15	1.48	31.69	23.29	76.71
Shoal River (FE II)-Spring 10	84	4.83	7.18	2.35	48.52	42.00	82.14
Destin (FEII)-Spring 10	90	4.36	6.46	2.10	48.21	28.00	74.44

*number of students that completed pre- and post-tests and participated in the field experience

A paired t-test was run on both pre- and post-test data for Field Experience II (HBSP, Spring 2010) to determine if a significant (95% significance level) difference exists between pre- and post-test means. The test was run for each school. Results of the paired t-test show that a significant difference does exist between the pre- and post-test means for SRMS and for DMS.

The graph below shows test score vs. number of students for Field Experience II (HBSP, Spring2010). The arrow represents the shift of scores from pre- to post-test, representing the increase in the student's knowledge of the science concepts covered in the field labs. The mode or most common test score (pre- and post-test) is also noted.



One of the goals of this project is to close the achievement gap between the higher performing schools along the coast and the underserved rural schools in the north. While Shoal River Middle School does not represent a rural school, an achievement gap does exist between it and Destin Middle School. During the 2008/2009 school year, 75% of Destin Middle School 8th grade students scored at level 3 and above on the FCAT Science assessment while 51% of Shoal River Middle School students scored at level 3 and above. A year later, 2009/2010, Shoal River 8th graders increased their percentage of students scoring at level 3 and above to 56% and Destin Middle School decreased slightly to 72%. Results from the pre- and post-test data suggest that the achievement gap is also closing concerning the specific science concepts that are covered during the field experiences. Although we cannot make a clear causal relationship between our small intervention and the larger trend, it is encouraging.

Community Involvement:

Both schools participated in the Choctawhatchee Family Estuary Festival (<http://www.nwfsc.edu/MattieKellyInstitute/env-estuary-festival.cfm>) on May 1, 2010. Students and teachers from DMS presented informational brochures detailing the field labs conducted there and both schools also presented information concerning their respective school-yard monitoring projects and field experiences (see attached brochures). In addition to the primary project partners at the school and at the parks, the project has engaged a wide-range of partners from the community, including members of the Florida Sea Grant Extension, Agricultural Extension, Master Naturalist Volunteers, Parents, and Friends of the Emerald Coast State Parks.

Outreach Activities:

The project has its own web-page that contains information about the LIFE-Okaloosa program, as well as links to the labs in PDF format.

<http://www.dep.state.fl.us/secretary/ed/life/okaloosa/default.htm>

Other Performance Measures:

Indicator	Measure	Details
Audience size and diversity (minus staff and federal participants)	174 total students participated in field experience II (Spring2010)	84 students from SRMS and 90 students from DMS participated in field experience II (Spring, 2010) at Henderson Beach State Park. Demographic statistics of teachers and students are attached.
Intent to apply knowledge/skills to work (teachers only)	Teachers from Shoal River and Destin Middle School received TPD	Stipends were provided for individuals to attend workshops such as WOW and GEMS, and to present program information at the Mattie Kelley Research Symposium during the Estuary Festival.
Number of activities conducted, their topics as they relate to GOMA priority issues	Field Labs: Classifying Plants: Plant Adaptations Gulf Shoreline Sand Systematics School-Yard monitoring projects Service Learning projects	The three labs conducted during Field Experience II are related to the following GOMA priority issues: Quality for Healthy Beaches and Shellfish Beds, Identification and Characterization of Gulf Habitats, and Wetland and Coastal Conservation and Restoration. School-Yard Monitoring: <ul style="list-style-type: none"> • SRMS: water quality monitoring, erosion monitoring and protection • DMS: RBSP informational brochures, pond water quality monitoring on school grounds. Service Learning Projects: <ul style="list-style-type: none"> • SRMS: World Water Monitoring Day, Choctawhatchee Bay Family Festival participation (booth). • DMS: World Water Monitoring Day, Choctawhatchee Bay Family Festival participation (booth).
Follow-on activities as a result of [project] activities	Voluntary participation in events such as coastal cleanups, park visits or festivals	DMS and SRMS students had booths at the Choctawhatchee Family Estuary Festival May 1, 2010. Todd Brackin and Paula Farland gave an oral presentation about the LIFE-Okaloosa program at the Mattie M. Kelley Cultural and Environmental Institute Symposium on April 30, 2010.

Attachments (CD)

1. Field Labs
2. Pre/Posttests
3. Demographic Data
4. Service Learning Plans
5. School-Yard Monitoring Plans
6. DMS brochures (service learning project)
7. Mattie M Kelley Symposium abstract and PowerPoint presentation
8. Pictures from Schoolyard Monitoring and Service Learning Activities