



NOAA'S COASTAL SCIENCE EDUCATION INSTITUTE

2011 MIDTERM REPORT

BY

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PROJECT TITLE: NOAA Coastal Science Education Institute

REPORT PERIOD DATES: March 2011 – September 2011

INTRODUCTION:

In 2011 NOAA Fisheries, Panama City Laboratory and the Science and Discover Center of Northwest Florida were awarded an internal education grant to provide professional development opportunities to Florida Bay District school teachers and local environmental professionals. Through many brain storming sessions with contributing partners (NOAA Fisheries, the Science and Discovery Center of Northwest Florida, Bay District Schools, and Florida Sea Grant/University of Florida), the creation of the NOAA Coastal Science Education Institute (NOAA CSEI) was developed.

Professional development for educators in the science, technology, engineering, and mathematics (STEM) areas are limited in northwestern Florida. During the past few years our outreach efforts at the Panama City Lab have increased and we have developed a great working relationship with Bay District Schools and free choice learning centers. Typically, NOAA Fisheries has provided lab tours, live marine organism exhibits, and beach seine field trips for student in grades K-12 by request only. These activities have enhanced the curriculum within our local schools on a small scale; however, they are not a part of the preferred “inquiry-based” programs that are proven to have the most impact in environmental education and do not encompass all of Bay District Schools.

PURPOSE:

NOAA’s Coastal Science Education Institute was established to:

- Increase teacher knowledge of Florida’s natural systems.
- Increase teacher knowledge of the plants and animals that depend upon those systems.
- Increase teacher understanding on roles that humankind has in shaping our past, determining our future, and stewardship of our resources.
- Prepare teachers to share knowledge gained with their students and to encourage them to act in a positive manner.
- Provide teachers with meaningful watershed experiences.
- Encourage teachers to collaborate with each other through an on-line portal hosted by the Science and Discovery Center of NWFL.
- Provide teachers with practical hands-on experience in environmental education through one-week science camp participation.
- Increase teacher understanding of the role of NOAA in Gulf Coast fisheries studies.
- Develop a teacher guide based on activities developed by Institute participants.

APPROACH:

To capture a wider outreach target, twenty formal and non formal educators were given the opportunity to participate in the NOAA CSEI program and implement coastal and environmental programs into their regular school curriculum or profession. All Bay District school teachers received 30 continuing education credit hours for participation in the program and all participants received certification as Coastal Master Naturalists as well as an educational resource kit.

Educators were informed that a final project was required in order to receive certification, continuing education credits, and a stipend. A template for development of the project was presented in order to provide consistency between the projects as well as streamline the process of transforming the final projects into a published resource book at the conclusion of the project. Due to the nature of this professional development workshop, participants were instructed to select a topic of choice from the Coastal Master Naturalist Curriculum and translate it into an inquiry-based learning activity correlating the Next Generation Sunshine State Standards and the Ocean Literacy Concepts for target grade levels 4 - 8. The participants were instructed to refer to the "Teacher Portal" accessed through the Science and Discovery Center's website for various resources and to collaborate with the rest of the group.

Educators were also given the opportunity to take the project created and practice implementing the activities on students participating in the Marine Science Camp held at the Science and Discovery Center of Northwest Florida the week following the workshop. This portion of the program provided teachers with an informal and relaxed setting to engage students in environmental education concepts learned during the workshop. It also provided another mechanism by which the final projects created could be implemented in an educational setting and evaluated.

Sea Grant and guest presenters covered topics on: ecology, marine and estuarine habitats, uplands, reptiles, mammals, fishes, and invertebrates during the first two days of classroom instruction. At the conclusion of each day participants worked within groups on final projects and presentation ideas.



To incorporate the information learned through the hours of classroom lectures, field activities began on June 22, with a field trip to the St. Andrews State Park located on Panama City Beach, Florida. Educators were able to explore the interpretive center and look at the exhibits from a different perspective. Everyone was asked what could be done to improve the existing exhibits that would capture a student's attention and also what exhibits would they like to see added. Participants discussed and recorded their thoughts in their journals and aloud with each other.



After touring the interpretive center, the educators traveled to the nearby protected sea grass beds of the state park to explore and learn about the many roles the sea grass beds provide for fish and invertebrates. Seining the grass beds uncovered many diverse species of juvenile fish and invertebrates, some seen for the first time by many of the educators.



While seining, park visitors walking along the beach were curious about the activities taking place; this presented the educators with a perfect opportunity to pass along freshly learned field knowledge to two different age groups. Educators were able to describe to the children and adults, the importance of protecting our marine resources.



After a quick lunch break, the educators were excited to get into the water and snorkel the jetties to explore more underwater ecosystems. Educators suited up for the jetty exploration and for some this was the first time that they had ever snorkeled, so safety was first priority.



After receiving their snorkel gear and instruction on what to look for and where to find it, the educators made their way to the white sugar sand beach. Even while walking to the beach educators were reminded of the importance of certain species of plants, such as the sea oats present in the sand dunes and the restoration efforts taking place.



Human impact to coastal dunes and beaches are ever present, especially during tourist laden summer months, but despite the crowds the educators were able to explore and see the many organisms that inhabited the jetties.



Participants returned to the NOAA Fisheries lab to cap the day off with a tour and demonstration of current research being conducted at the Panama City Lab. During the tour, the educators were introduced to production ageing and stock assessments of reef fish and pelagics by Robert Allman, Carrie Fioramonti and Michelle Duncan. Educators were taught how to age an otolith and allowed to practice their newly acquired aging skills.



Common elasmobranchs of the Gulf of Mexico were also put on display and current shark research, observer programs and sawfish abundance research were discussed in detail by Loraine Hale Williams.



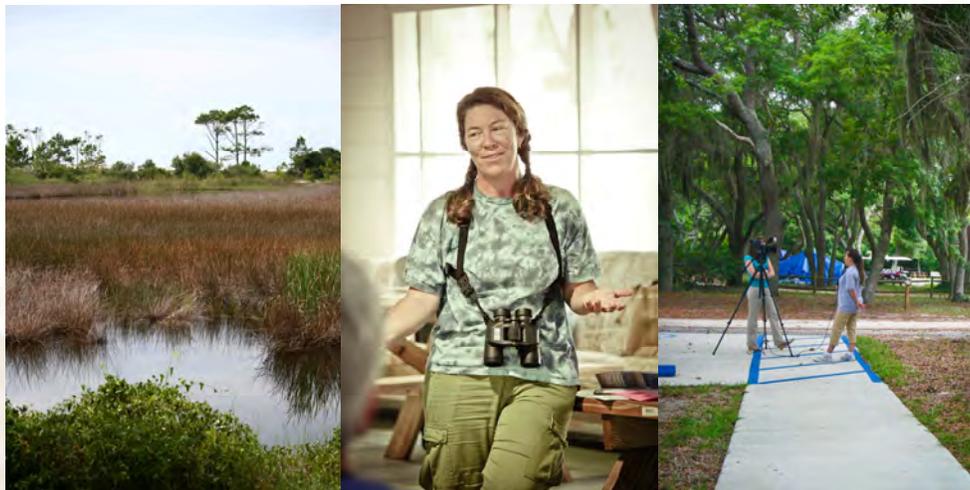
The tour ended with a walk to the dock to observe the sea turtles housed temporarily at the Panama City lab. Benn Higgins of NOAA Fisheries, Galveston Lab,

explained the significance of the research conducted with Turtle Excluder Devices (TEDs) on shrimp boats to prevent the lethal take of loggerhead sea turtles or other protected species.



Classroom instruction resumed on June 23 at the Panama City Laboratory, covering topics such as general birds, water birds, and ethics. The last two hours were devoted to final projects and participants were encouraged to focus on correlating the activity with NGSSS benchmarks and OLC standards, as well as ensuring that each project was an inquiring-based learning activity.

On the last day of the workshop, educators again were given the opportunity to experience interpretive lectures at Camp Helen State Park. The coastal dune lake ecosystem was presented by guest speaker Emily Ellis (founding member of Lake Powell Community Alliance), who explained the diversity of the ecosystem and adaptations required by all species to survive in the constantly changing environment. Local news coverage highlighted the efforts of the Science and Discovery Center of Northwest Florida and NOAA Fisheries to organize the NOAA Coastal Science Education Institute to increase continuing education amongst formal and informal educators within northwest Florida.



The interpretive tour began under the shade of the old oak trees, where the educators were given the history of the park. As the educators walked the trails, the park provided an assortment of birds, insects and plant species and all of the various habitats that were covered throughout the week. Educators were taught how to

identify and distinguish between similar species found along the coastal dunes and inland marshes.



After touring Camp Helen the educators returned to NOAA Fisheries to deliver their final group projects. Projects ranged in creativity, with some educators creating activity handouts, games and even a blues song with lyrics to sing a long.



Following the presentations, educators were given the Coastal Master Naturalist post-test to compare with the pre-test results and determine the effectiveness of the workshop. In addition evaluations of the Florida Master Naturalist Program and the Coastal Science Education Institute were completed by the participants. A graduation ceremony was held and each participant received a certificate, patch and pin from the Florida Master Naturalist Program, a NOAA Fisheries hat, and a resource kit.



The resource kit included a weather proof journal and writing paper, Living Beaches by Blair and Dawn Witherington, A Good Catch by Taylor Morrison, fish print replica, specimen collection kit, marine species fish posters, and various publications from non-profit, state and federal agencies.



EVALUATIONS:

- **PRE/POST TESTS RESULTS:**

Based on the responses from questions asked prior to the course and the same questions asked again at the completion of the course, a 22% increase in knowledge was demonstrated by the educators.

- **FINAL PROJECTS:**

Due to time restrictions and the amount of course material covered, this left very little time for participants to work on their final projects during the workshop. Therefore, each pair or trio of participants created a rough draft of their project to present on graduation day. After conclusion of the workshop participants were given an extra week to put finishing touches on their projects, which were uploaded onto the Science and Discovery Center's web portal for viewing. The completed projects will be included in the final report with all accompanying hand outs and media.

- **SCIENCE AND DISCOVERY CENTER MARINE CAMP PRACTICAL:**

Five formal educators returned to the Science and Discovery Center the week following the NOAA CSEI workshop to practice their projects developed during the workshop. Principle investigators Michelle Duncan and Carrie Fioramonti observed these implementations and evaluated how interactive and feasible each project would be in a classroom or field setting and also how the students responded to the activity. Each educator was given a supply stipend to purchase supplies needed to conduct their activity.

Project partner Jennifer Petro of the Science and Discovery Center took the students, who ranged in age from 10 – 14 years, to the sea grass beds of St. Andrews State Park to conduct a beach seine. Carolyn Sickerman, an art teacher at Everitt Middle and participant in the CMN workshop, along with her project partners

developed an activity entitled “Can I survive” which investigated the sea grass communities. She used her supply stipend to make floating collection buckets for the students to hold collected specimens while snorkeling.



The students experienced interpretive lectures similar to those given during the CMN workshop, but tailored to their age group. While snorkeling, the students were able to explore the sea grass beds and collect various invertebrates. The students were asked to apply what they had learned in the classroom and identify the importance of the grass beds and critical ecological processes.



An in classroom activity created by Prudence Manson, a science teacher moving from 3rd to 5th grade in the new school year, along with her project partners, developed an activity entitled “The Sargassum Hotel and Diner”. Each student was given a container of sargassum and asked to form a hypothesis about what type of organisms they would find and the types of relationships that occur with species living in this specific ecosystem.



Following the sargassum investigation the students were given a sea turtle presentation by Robert White, an elementary teacher transitioning from a different state, but also a current volunteer with the Turtle Watch program on Panama City Beach. Students were asked a variety of questions and shown an informative video on sea turtles that inhabit Florida's beaches. After the lecture the students were treated to a game, developed by Robert as part of his final project, entitled "Turtle Tag" which simulated the obstacles that sea turtles encounter from hatchling to adulthood.

Students were designated as either turtle hatchlings or obstacles, with one student as the predator, but to make the game interesting the student playing the predator was blind folded. The other students were instructed that they must cross from one end of the room to the other without being touched by the predator, which signified that the hatchling did not make it to adulthood. The students really enjoyed the game and wanted to keep playing even after camp had ended and parents were waiting outside to pick them up. The implementation of the final projects during the marine science camp week was a tremendous success and allowed the teachers the opportunity to correct any problems or fine tune particular areas.



Fifth grade teachers, Danielle Brennan and Jessica Heath implemented their project “Alien Invasion” at the marine camp. Their activity covered the concepts of “top-down control” and “invasive species” and illustrated to students what happens to the species composition of an ecosystem if either a keystone species is removed or an invasive species is introduced. The activity involved reading a book illustrating top-down control and the removal of a keystone species, What if There Were No Sea Otters? By Suzanne Slade. Then the students played a game that represents what happens within an ecosystem if an invasive species is introduced. The game went on for several rounds; the first couple of rounds involved different native species foraging and reproducing; the last several rounds we introduced the invasive species and the competition was fierce. Within a few rounds, the invasive species had outcompeted many of the native species and outnumbered them. We followed up the activity with a discussion about how and why this happened as well as how it can be related to our own Gulf of Mexico ecosystem and habitats.



High school biology teacher Tammy Stundon and 5th grade teacher Wanda Giles implemented their final project, “Get Inside Out” at Patriot Summer Adventure Camp at Lucille Moore Elementary School. This activity introduced concepts of morphology and anatomy of a squid. The students began by listing what they knew about the squid (e.g. marine invertebrate, 8 arms and 2 eyes) and learned more about the animal (e.g. location of mouth/beak, 2 tentacles in addition to 8 arms). This followed up by the dissection of a preserved specimen and a game of “pin the organ on the squid”. For the game, the students were blindfolded and tried to pin the organ in the appropriate location. Once attempted (and after some giggles) the group was asked if this was correct and if not, where that organ actually is found. After the game, the students read literature and played word games featuring squid. The students were then treated to calamari to show one way humans use squid for sustenance.

- JOURNAL ENTRIES: Journal entries were used to evaluate the likes and dislikes among the participants and rate the organization and effectiveness of the material and field trips presented throughout the program.

St. Andrew State Park - Date 6/22/11

Smokely - "Awesome!"

It was my first time, EVER, going Smokely. The amazing things I saw I will always remember. I can't wait to be able to share these "usuals" to my students. This will definitely be an on-going adventure for me. I can't wait to do it again.

Things I saw - an "Octopus!" sliding under a rock. Potato Chip algae, growing off of rocks, beautiful coral with bright colors - fluorescent pink, orange, yellow.

We saw a small school of Sergeant Major fish (black & yellow striped)

We saw a male & female - sard class actually mating

We saw bright blue fish with yellow tails (fluorescent)

We saw so many sea Anemones! (2)

It was so neat - I saw a black

Date

I can't imagine my life without being able to teach. The rewards of a student finally getting a concept, finally gaining confidence & finally becoming organized right before my eyes, is immeasurable. Knowing that I have made a little difference in their lives and hoping that what they learn with me will follow ~~them~~ ^{carry over} through the years and producing great ~~city~~ ^{city} citizens and who will put opportunity back ~~into~~ ^{into} our world and make it a better, productive place. My goal is to make every student feel special and love learning.

WHY I TEACH ...

Teaching gives me a sense of fulfillment when I look back on my day/week/month/life; working with young people helps keep me young; my children are proud of me and what I do; the feedback I get from students, former students, and parents keeps me energized and proud; and the feeling I get when my students have an "AHA" moment / or "get it". Sounds pretty selfish, doesn't it?

Date June 23, 2011

- Fish, fishes? I thought it was always grammatically correct to say "fish."
- Bringing in different instructors based upon their speciality was very beneficial. Also having most of those instructors remain throughout the whole course allowed for "I'm not sure," questions to be answered.
- Having refreshments were nice.
- I would recommend a few more 5-10 minute breaks during such a highly compacted course. I understand we were trying to learn a lot in a very short period of time, but it was hard to stay seated so long and I am a person who hates to miss instruction. It was also hard to stay focused when 1/2 of the class was up walking around getting refreshments & what not, but instruction was still going on. Thursday & Friday was much better for breaks.
- All of the instructors were phenomenal! They were each full of experience and knowledge and had much to share. You can tell they are passionate about their work. They made themselves easily available for answering questions or concerns after class. They presented the material in an easy and understandable manner. The guest speakers were wonderful too. It was nice to have "experts" from our area, not down south.

Comments
Suggestions

11/15/11

- SURVEYS:

- COURSE SURVEY: Paula Weaver, Bay District School Staff Training Specialist and project partner, conducted a survey on completion of the program asking the participants to rate their experience for each of the 5 days. Participants were asked to score on a scale of 1 – 4 (1= bad, 2 = mediocre, 3 = good, 4 = excellent) the organization, presentation of information, presenters and facility and add any additional comments for that particular day. In addition to these 5 questions, we asked for:

- 1.) Suggestions for improvement:
- 2.) One thing I know I want to share with students:
- 3.) One thing I wish I had learned or learned more about:
- 4.) A Department of Environmental Protection project meeting in July entitled “Science on the Gulf” developed a workshop to effectively link agencies and organizations to respond to the coastal environmental education needs of Bay District School students in terms of the Next Generation Sunshine State Standards. What needs do students have regarding scientific knowledge and the coastal environment?

Coastal Science Education Institute
Participant Assessment - June 24, 2011

Please rate the following based upon your experience this week.
1= Bad 2= Mediocre 3=Good 4= Excellent

1. DAY 1- Science and Discovery Center

a. Organization	1 2 3 (4)
b. Presentation of Information	1 2 3 (4)
c. Presenters	1 2 3 (4)
d. Facilities	1 2 3 (4)

Comments:

2. DAY 2- Science and Discovery Center

a. Organization	1 2 3 (4)
b. Presentation of Information	1 2 3 (4)
c. Presenters	1 2 3 (4)
d. Facilities	1 2 3 (4)

Comments:

3. DAY 3- NOAA and St. Andrews State Park

a. Organization	1 2 3 (4)
b. Presentation of Information	1 2 3 (4)
c. Presenters	1 2 3 (4)
d. Facilities	1 2 3 (4)

Comments:
This was my favorite day. I wish more of this course would have been hands on.

4. DAY 4- NOAA

a. Organization	1 2 3 (4)
b. Presentation of Information	1 2 3 (4)
c. Presenters	1 2 3 (4)
d. Facilities	1 2 3 (4)

Comments:
I enjoyed seeing & learning about the turtles. I was fascinated with the oilish research.

5. DAY 5- Camp Helen
- | | |
|--------------------------------|-----------|
| a. Organization | 1 2 3 (4) |
| b. Presentation of Information | 1 2 3 (4) |
| c. Presenters | 1 2 3 (4) |
| d. Facilities | 1 2 3 (4) |

Comments:

Suggestions for Improvement:

- Examples of what the final project should look like
- Stretch the course out so that it's not crammed into one week.

One thing I know I want to share with students:

The impact we have on sea turtle nesting sites

One thing I wish I had learned or learned more about:

I wish getting a collection permit were part of this course.

A DEP meeting in July entitled "Science On The Gulf" will try to link agencies and organizations to respond to the coastal environmental education needs of Bay District School students. What needs do students have regarding scientific knowledge and the coastal environment?

- Seagrass beds and their importance

Thanks very much for your participation! We look forward to supporting you and seeing you in action!

Coastal Science Education Institute
Participant Assessment - June 24, 2011

Please rate the following based upon your experience this week.
1=Bad 2=Mediocre 3=Good 4=Excellent

1. DAY 1- Science and Discovery Center
- | | |
|--------------------------------|-----------|
| a. Organization | 1 2 3 (4) |
| b. Presentation of Information | 1 2 3 (4) |
| c. Presenters | 1 2 3 (4) |
| d. Facilities | 1 2 3 (4) |

Comments:

This first day really excited me! It was so well organized and the materials were awesome

2. DAY 2- Science and Discovery Center
- | | |
|--------------------------------|-----------|
| a. Organization | 1 2 3 (4) |
| b. Presentation of Information | 1 2 3 (4) |
| c. Presenters | 1 2 3 (4) |
| d. Facilities | 1 2 3 (4) |

Comments:

Learning about habitats and having information in front of me is what I needed.

3. DAY 3- NOAA and St. Andrews State Park
- | | |
|--------------------------------|-----------|
| a. Organization | 1 2 3 (4) |
| b. Presentation of Information | 1 2 3 (4) |
| c. Presenters | 1 2 3 (4) |
| d. Facilities | 1 2 3 (4) |

Comments:

The best day ever! My first time snorkeling! I saw an Octopus! What's better than that?

4. DAY 4- NOAA
- | | |
|--------------------------------|-----------|
| a. Organization | 1 2 3 (4) |
| b. Presentation of Information | 1 2 3 (4) |
| c. Presenters | 1 2 3 (4) |
| d. Facilities | 1 2 3 (4) |

Comments:

A tour at NOAA was out of this world - I saw different species of fish and I learned how to tell the size of fish, and what the meat!

5. DAY 5- Camp Helen

a. Organization	1 2 3 (4)
b. Presentation of Information	1 2 3 (4)
c. Presenters	1 2 3 (4)
d. Facilities	1 2 3 (4)

Comments:
Another trip to Camp Helen thrilled me because it was my first time I was there. More neat information on habitats - Coastal Dune Lake would be a living my class (5th grade) here.

Suggestions for improvement:
It couldn't have been any better! (☺)

One thing I know I want to share with students:
The habitats & the importance of protection, How

One thing I wish I had learned or learned more about:
How to identify plants & animals.

A DEP meeting in July entitled "Science On The Gulf" will try to link agencies and organizations to respond to the coastal environmental education needs of Bay District School students.
 What needs do students have regarding scientific knowledge and the coastal environment?
Students need to actually visit and see these places first hand. Pictures, printouts from my experience videos, etc. Can never take the place of actually being there. In a hands on person and what I have learned seen this well. I will never forget. Actually it makes me want to know more. How come some would it be if my student or all students had this same. Needs on experience to spark an enthusiasm and hunger for more?

Thanks very much for your participation! We look forward to supporting you and seeing you in action!

Of the 17 surveys received, the overall satisfaction of the program was excellent. All of the principle investigators/organizers of the workshop were pleased with the comments and will strive to correct the minor problems encountered during this workshop so that future workshops meet the satisfaction of all participants.

- SURVEYMONKEY.COM: An additional follow up survey was emailed to all participants on September, 9, 2011 through [surveymonkey.com](http://www.surveymonkey.com) <http://www.surveymonkey.com/s/F6VTWKG> . The questions included:
 1. Even though it is early in the school year - have you been able to use anything you learned/were given at the CMN training this summer? Please describe.
 2. If your plans for teaching the CMN material have changed, please explain how and why.
 3. Would you utilize resources and supplies to execute/implement each final project developed at the CSEI if they were offered on a check out basis from the NOAA Fisheries building?
 4. What items would you like to or hope to be able to check out?
 5. There are two other modules of the Master Naturalist program. Are you interested in taking them? Both or which one? If you are not going to be able

to take the future courses please let us know why?

Inland/Upland module

Wetlands module

6. Would you recommend another teacher to this Master Naturalist program?
Why or why not?
7. If made, would you use a CD version of the "Coastal Science Education Institute Resource and Activity Book"
and if so would you use it a lot?
8. If a reunion of the class were planned - would you be interested in coming?

We are awaiting the results of this recent survey and will provide feedback in the final report.

CHANGES/PROBLEMS ENCOUNTERED:

Some of the "suggestions for improvement" from the course survey included: "too much for just one week", "more examples of what final projects should look like" and "provide more examples of activities to use in the classroom for application of knowledge". Due to the restrictive summer schedules of the participants, the course was condensed from the standard six week duration to one week. If future funding is available, the course duration would be extended to focus on specific topics and species that are of concern to Northwestern Florida and the longer duration would also allow more development of final projects.

FINAL REPORT DELIVERABLES:

The teacher resource manuals will be included in the final report to NOAA's Office of Education (full descriptions of the completed final projects and associated PowerPoint presentations, hand outs and resources necessary to conduct projects). The budget for funds provided for the implementation of the workshop and outreach activities is attached.

ACKNOWLEDGEMENTS:

We would like to thank NOAA's Office of Education for funding this amazing opportunity that provided educators with a tremendous amount of knowledge that they will pass along to their students and the public. This grant also provided resources that were desperately needed in the classroom and will continue to aid in the efforts to educate Bay County students on the importance of protecting their coastal ecosystems. We are also very thankful for the resources donated by the United States Fish and Wildlife Service, Florida Sea Grant, NOAA Office of Education, Florida Wildlife Research Institute, Florida Fish and Wildlife Conservation Commission and the Turtle Watch Program which were included in the resource kits. Thank you to the staffs of: the Science and Discovery Center of Northwest Florida and NOAA Fisheries for helping with the behind-the-scenes aspects of the workshop and photos.

	Vendor	Price/Unit	Quantity	Processing Fees	Total	Purchased by
Coastal Master Naturalist Workshop	IFAS/University of Florida CMN workshop fee	225.00	20		4,500.00	NOAA
	Sea Grant facilitator travel	500.00			500.00	NOAA
	Science & Discovery Center facility rental fee	500.00			500.00	Science & Discovery Center
	Science & Discovery Center facilitator fee	500.00			500.00	Science & Discovery Center
	ARINC website developer	300.00			300.00	NOAA
	Bay County teacher stipend	1,625.00	13	81.25	1,706.25	Bay Education Foundation
	Bay County teacher supply stipend	250.00	5		250.00	Science & Discovery Center
	Sea Grant facilitator fee	500.00			500.00	NOAA
	professional photographer fee	300.00			300.00	Science & Discovery Center
	Food and supplies for workshop	887.00			887.00	Science & Discovery Center
	Camp Helen Start Park entrance fee	13.00			13.00	Science & Discovery Center
	transportation to state parks	402.00			402.00	NOAA
	dive snorkel gear (fins, masks, and inflatable vests)	69.95	10	39.50	736.00	NOAA
	cooler	44.99	1		44.99	NOAA
	name badges	22.19	1		22.19	NOAA
	pens	16.79	2		33.58	NOAA
	pencils	7.79	1		7.79	NOAA
Educational Resource Materials Kit	collection jars	14.95	20	15.12	314.12	NOAA
	fish prints replicas	14.95	20	26.91	296.01	NOAA
	mounted fish scale slides	9.35	20	28.08	215.08	NOAA
	horse shoe crab models	0.75	100		75.00	NOAA
	Landsend NOAA logo hats	4.50	40		180.00	NOAA
	Rite-in-rain journals	3.65	20	45.50	118.50	NOAA
	Rite-in-rain copier paper	29.95	2	10.90	70.80	NOAA
	personal writing journals	7.99	20		159.80	NOAA
	28 qt. plastic storage bins	5.97	20		119.40	NOAA
	book: Living Beaches	14.93	20		298.60	NOAA

	Vendor	Price/Unit	Quantity	Processing Fees	Total	Purchased by
Coastal Science Education Institute Resource Book Materials	resource book printing	300.00			300.00	Science & Discovery Center
	Avery tab dividers	1.59	32		50.88	NOAA
	Avery laminating sheets	16.80	4		67.20	NOAA
	Avery tab dividers	0.88	18		15.84	NOAA
	notebook binders (1 1/2 inch)	3.78	23		86.94	NOAA
	notebook binders (3 inch)	5.00	2		10.00	NOAA
	double sided CD jewel cases (25)	14.99	2		29.98	NOAA
	cd-rw (25)	16.99	3		50.97	NOAA
	dvd-rw (100)	34.98	1		34.98	NOAA
	dvd-rw sleeves (100)	5.88	1		5.88	NOAA
	fish prints replicas	78.57	1		78.57	NOAA
Outreach Supplies for Bay School District and NOAA Fisheries	foam brushes	0.57	10		5.70	NOAA
	tempera fish paint (red and black)	5.49	5		27.45	NOAA
	tempera fish paint (blue)	4.99	3		14.97	NOAA
	tempera fish paint (assorted colors)	34.50	1		34.50	NOAA
	Book: Field guide to Florida	13.57	1		13.57	NOAA
	Book: Field guide to North America	13.96	1		13.96	NOAA
	Book: Field guide to tropical fishes	13.73	1		13.73	NOAA
	Book: Reef fish identification set	75.60	1		75.60	NOAA
	Book: Sharks, skates and rays of the Gulf of Mexico	16.50	1		16.50	NOAA
	Book: What if there were no sea otter?	19.75	1		19.75	NOAA
	Book: Who eats what? Food chains and food webs	5.99	1		5.99	NOAA
	Book: Seaside naturalist: a guide to the study of the seashore	10.44	1		10.44	NOAA
	Book: Fishes of the Gulf of Mexico	12.89	1		12.89	NOAA
	Book: What are food chains and webs?	7.95	1		7.95	NOAA
	DVD: Reef fish identification	55.00	1		55.00	NOAA
	DVD: blue planet seas of life	34.48	1		34.48	NOAA
	digital camera and kit	229.00	1		229.00	NOAA

Vendor	Price/Unit	Quantity	Processing Fees	Total	Purchased by
Celestron biological microscope	146.95	1		146.95	NOAA
sea shells	11.10	6		33.30	NOAA
20 gallon brute trash can	19.97	1		19.97	NOAA
32 gallon brute trash can	29.97	1		29.97	NOAA
5 foot folding tables	37.88	2		75.76	NOAA
storage locker	20.97	1		20.97	NOAA
fish printing paper	4.84	5		24.20	NOAA
plastic pint storage containers	1.98	4		7.92	NOAA
index cards	1.88	13		24.44	NOAA
card stock	5.48	2		10.96	NOAA
writing/graphing pad	2.77	1		2.77	NOAA
foam liner	4.74	1		4.74	NOAA
air line	2.82	1		2.82	NOAA
air pump	10.52	2		21.04	NOAA
bubble stone	1.18	2		2.36	NOAA
Velcro	17.97	1		17.97	NOAA
collection pans	4.96	4		19.84	NOAA
fish collection nets	4.96	2		9.92	NOAA
fish collection nets	7.96	1		7.96	NOAA
5 gallon buckets	3.97	2		7.94	NOAA
extension cord reel	6.97	1		6.97	NOAA
100 foot extension cord	16.27	1		16.27	NOAA
coloring pencils (50)	5.97	1		5.97	NOAA
coloring markers (50)	5.96	1		5.96	NOAA
			Total spent	14,899.80	