

February 25, 2025

The Matagorda County Texas A&M AgriLife Extension Service and Texas Sea Grant Office extend our heartfelt gratitude to the Matagorda Bay Mitigation Trust for their generous support. Thanks to this grant, we have had the privilege of witnessing firsthand the transformative impact that the purchased educational equipment has had on the youth of Matagorda County and beyond. This investment not only enhances learning opportunities today but will continue to benefit our community for years to come. The equipment acquired through these funds will serve as a valuable resource in shaping an entire generation's understanding of coastal and marine and science, conservation, environmental science, and sustainability.

Below, we have provided a summary of the equipment purchased and the programs delivered over the past year, highlighting the significant reach and effectiveness of this initiative.

Respectfully,

A handwritten signature in black ink, appearing to read 'Amy Nowlin', with a large, stylized flourish extending to the right.

Amy Nowlin
*Matagorda County AgriLife Extension | Texas Sea Grant
Coastal and Marine Resources Agent*

Educational Equipment Purchased

- 2 Envirosapes Models: Coastal Watershed, Wetlands & Floodplain
- Water Cycle Model
- Sea Floor Simulation Model
- 52 Zebco Combo Rod/Reels -Spincast
- 10 Zebco Combo Rod/Reels-Spinning
- Fishing Equipment: Fishing Tackle, Live Wells, Aerators, Bait Buckets, Small Dip Nets, Fishing Line, Nylon, Tackle Boxes, Fish Weight and Measurement Stick, Pliers, Fish Grippers, Hook Remover.
- Sampling Equipment: Seins, Perch traps, Crab Nets, Shrimp Nets, Crawfish Rakes, Cast Nets, Crawfish Traps, Crawfish Bait (Cattle Cubes)
- 10 Digital Microscopes
- 2 Power Outlet Hubs, D-Batteries
- Prepared Specimen Microscope Slides (Insects, Wicked Wings)
- Classroom Great White Shark Model
- Classroom Frog Model
- Classroom Sea Turtle Egg Models
- Skulls and Pelts (Mammals / Birds) Kit, Tracks Kit, Owl Pellets, Beak tools: Plastic Chopsticks
- Water Quality Kits (Aquatic Bug Kits, Estuary Monitoring, Coliform)
- Refills: Ph, DO
- Macroinvertebrate Life Cycle, Identification Cards & Sorting Sheets
- Insect Viewers-Bug Jars, Butterfly Pop up Net/Carrier
- STEM Supplies: Test Tubes & Racks, Pipettes, Tweezers, Safety Glasses
- DO Meter & Travel Case
- Turbidity Tube
- Aquatic Dip Nets
- Flex Tanks
- Fish Printing Kit, Paper, Paint and Paint Brushes
- Sifters, Sand Rake, Beach Pails, Plastic Shovels
- Rtic Cooler
- Identification Guides (Seashells)
- Project Learning Tree Curriculum Book
- Marine Mammal Rescue Kit- Dolphin inflatable, Stretcher
- Sea Turtle Prosthetic Kit-Plush Sea Turtles
- Sea Turtle Identification-Dichotomous Key Kit
- Dichotomous Key Kit-Fun with Classification
- Who is Littering? Forensics Kit

Program Summary

The 2024 Palacios YMCA Environmental Summer Camp provided an immersive, hands-on four-week learning experience focused on coastal ecology and marine science for **11** youth participants. Campers engaged in activities such as fishing, crabbing, and fish printing, while also exploring STEM topics like water quality testing, ecosystem dynamics, and the structures and functions of coastal organisms. These activities utilized educational equipment purchased with the Matagorda Bay Mitigation Trust grant, enhancing interactive learning opportunities. Through these hands-on experiences, participants developed environmental awareness, stewardship skills, and a deeper appreciation for Matagorda County's coastal resources.

An additional **44** youth attending the ten-week 2024 YMCA Bay City Programs Summer Camp also had the opportunity to participate in and utilize the purchased equipment in many of these engaging activities.

Several after-school programs across Matagorda County have continued to benefit from educational experiences using additional equipment purchased through the Matagorda Bay Mitigation Trust grant. Programs such as the YMCA Bay City After-School Program and the Palacios Library's *Science Rocks* Program have incorporated hands-on learning opportunities that enhance STEM education and environmental awareness. Looking ahead, future programming is additionally planned in collaboration with the Palacios City by the Sea Museum, as well as the Bay City and Sargent Libraries, and 4-H Gulf Coast Angler Day, further expanding access to these valuable educational resources for local youth.

2024 YMCA Programs Summer Camps: (Palacios and Bay City)

5/28/2024-Angler Education, Safety and Casting

Bay City YMCA Summer Campers participated in an engaging introduction to angler education, where they learned essential fishing skills and responsible angling practices. Campers were taught the fundamentals of casting fishing rods, ensuring they developed proper techniques for accuracy and safety. They also explored important safety guidelines, including handling fishing gear responsibly and practicing ethical catch-and-release methods.

As part of their learning experience, students delved into fish identification, studying the characteristics of different species commonly found in Texas waters. Using resources like the *Outdoor Annual*, they learned about fishing regulations, size and bag limits, and conservation practices designed to protect aquatic ecosystems. This hands-on lesson not only equipped campers with the knowledge and skills needed for recreational fishing but also fostered a deeper appreciation for Texas' rich natural resources and the importance of sustainable fishing practices.

6/4/2024-Angler Education: Saltwater Fishing

Bay City YMCA Summer Campers had an exciting hands-on fishing and crabbing experience at the LCRA Pier in Matagorda, TX. Using fishing rods and tackle, campers practiced their casting skills and worked on their angling techniques while attempting to catch local fish species. In addition to fishing, they used crab nets to safely catch and observe crabs, gaining a better understanding of these fascinating coastal creatures and their behaviors.

Campers also utilized dip nets to explore the shallow waters, collecting small fish and other aquatic organisms. This interactive experience allowed them to closely examine marine life up close, reinforcing lessons on species identification, habitat diversity, and coastal ecology. Through these activities, students not only built confidence in their outdoor skills but also developed a greater appreciation for Matagorda's unique coastal environment and the importance of responsible stewardship.

6/10/2024-Angler Education, Safety and Casting

Palacios YMCA Environmental Summer Campers participated in an immersive angler education program designed to teach the fundamentals of fishing and responsible outdoor recreation. Campers learned essential skills such as how to properly cast a fishing rod, improving their accuracy and technique. Emphasizing safety, instructors guided students through important guidelines, including how to handle fishing gear responsibly, respect wildlife, and follow ethical catch-and-release practices.

In addition to hands-on fishing instruction, campers explored fish identification, studying key characteristics of various species commonly found in Texas waters. They also learned how to navigate the *Outdoor Annual*, an important resource that provides information on fishing regulations, size and bag limits, and conservation guidelines. This experience not only equipped campers with the knowledge needed for recreational fishing but also fostered a deeper understanding of sustainable fishing practices and the importance of protecting Texas' aquatic ecosystems for future generations.

6/21/2024-Angler Education-Fresh Water Fishing

Palacios YMCA Environmental Summer Campers participated in an exciting day of hands-on fishing at two different locations, providing them with diverse angling experiences. In the morning, campers visited the *Catch and Release Pond* at Riverside Park in Victoria, TX, where they used fishing rods, tackle, and dip nets to catch and observe various fish species. This activity allowed them to practice their casting skills, learn proper fishing techniques, and gain firsthand experience with responsible catch-and-release practices. In the afternoon, the campers traveled to the *Catch and Release LNRA Pier* in Edna, TX, where they continued their fishing adventures in a different aquatic environment. Here, they applied the skills they had learned earlier in the day while experiencing the unique challenges and rewards of fishing from a pier. Throughout the experience, campers enhanced their fish identification skills, discussed local aquatic ecosystems, and gained a deeper appreciation for conservation efforts that support sustainable fisheries. These

activities not only reinforced their angler education lessons but also encouraged a lifelong appreciation for fishing and outdoor recreation.

6/17/2024-Water Quality

Due to concerns related to Tropical Storm Alberto, the Palacios YMCA camp's beach trip to Jetty Park- Matagorda, TX, was canceled. Salt water was collected in buckets off the Palacios Public Boat ramp and brought to the Sanford Community Center to proceed with the water quality lessons. Campers used the turbidity tube and the estuary monitoring water quality kits to learn about and check pH, Dissolved Oxygen, and temperature levels.

The original plan was to visit three different water sites—freshwater, marsh, and seawater—to conduct water quality analyses and make comparisons between the different environments.

Students were unable to take advantage of the opportunity to use the seine net and beachcombing tools. These activities would have allowed them to explore coastal ecosystems more thoroughly by catching and identifying marine life, as well as studying the types of debris and organisms found along the shoreline. The hands-on experience with these tools would have provided valuable insights into local biodiversity and the ecological roles of various coastal species.

6/13/2024-Mammals, Structure & Functions, Adaptations

During their visit to the Brackenridge Educational Center at Lake Texana in Edna, TX, campers participated in an interactive Texas native mammal lesson using the *Skulls, Pelts, and Tracks* kit. This hands-on experience allowed them to examine various animal skulls, feel the textures of different pelts, and analyze tracks to understand species identification, adaptations, and ecological roles.

6/18-19/2024-Fish Printing

Despite the challenges posed by Tropical Storm Alberto, campers at both the Palacios YMCA and Bay City YMCA Summer Camps took part in the fish printing kit activities. This artistic and educational experience allowed students to closely examine various fish species, focusing on their unique structures and functions. By carefully observing details such as fin placement, body shape, and scale patterns, participants deepened their understanding of fish anatomy and adaptations while creating their own fish prints as a lasting learning artifact.

6/20/2024-Macroinvertebrate Sampling & Owl Pellets

During a visit to Le Tulle Park in Bay City, the Palacios YMCA Environmental Summer Campers engaged in an exciting hands-on exploration of aquatic ecosystems through macroinvertebrate sampling. Using aquatic dip nets, campers collected specimens from the water and examined them up close with the help of flex tanks, tweezers, macroinvertebrate identification cards, and bug jars. This interactive experience allowed

students to identify different species, understand their roles in the ecosystem, and assess water quality based on the presence of indicator species.

Following their aquatic investigations, students shifted their focus to an engaging CSI-style lesson on owls. They explored owl diets by dissecting owl pellets, carefully extracting and identifying bones and other remains to determine the types of prey consumed. Through this activity, campers developed skills in scientific observation, critical thinking, and species identification while gaining a deeper appreciation for food webs and predator-prey relationships within local ecosystems.

6/26/2024 -STEM, Salinity Towers

Using test tubes, racks, and pipettes, students participated in an exciting STEM experiment focused on salinity and density. This hands-on activity allowed campers to explore the relationship between salt concentration and water density by carefully layering different solutions of colored water. By adding varying amounts of salt to each solution and using pipettes to gently layer them in test tubes, students observed how denser, saltier water settled at the bottom while less dense, freshwater layers floated above.

Through this engaging experiment, campers gained a deeper understanding of key scientific concepts, including buoyancy, stratification, and the impact of salinity on ocean currents and marine life. This activity not only reinforced fundamental chemistry and physics principles but also provided real-world connections to coastal and marine environments, helping students appreciate the science behind estuaries, ocean circulation, and aquatic ecosystems.

7/8-12/2024- Camp Cancelled due to Hurricane Beryl

Due to the impacts of Hurricane Beryl, both the Palacios and Bay City YMCA Summer Camps were unfortunately canceled this week. As a result, students missed out on valuable hands-on learning experiences, including a planned fishing excursion at Rusty Hook Ranch, where they would have practiced casting techniques, fish identification, and responsible angling practices. Additionally, campers were set to explore aquatic vegetation using dichotomous keys, an activity designed to enhance their classification skills and deepen their understanding of plant diversity and ecological roles in wetland and freshwater habitats. While these activities had to be postponed, efforts will be made to incorporate similar educational experiences in future programming to ensure students continue to benefit from engaging outdoor learning opportunities.

7/15/2024-Coastal Watershed & Water Cycle Models

Bay City YMCA Summer Campers explored the complexities of the water cycle through an engaging, hands-on learning experience using an interactive model. This activity allowed campers to visualize how water moves through different stages, including evaporation, condensation, precipitation, and collection. By actively participating in demonstrations, they gained a deeper understanding of how water circulates through the environment and the role it plays in sustaining ecosystems.

Building on this foundation, campers then worked with a *Coastal Watershed Model* to investigate the impact of human activities on water quality. Through this interactive lesson, they learned about point and nonpoint source pollution, identifying how pollutants from urban, agricultural, and industrial sources enter waterways. They observed how runoff carries contaminants into rivers, bays, and oceans, reinforcing the importance of conservation efforts and responsible environmental stewardship. This hands-on experience helped campers connect the concepts of the water cycle to real-world issues, empowering them to think critically about protecting water resources in their own communities.

After School & School Programs:

10/10/2024-Science Rocks: Coastal Watershed Model

Science Rocks, an after-school program hosted by the Palacios Library, provides engaging, hands-on science education opportunities to approximately **30** youth participants, fostering curiosity and a deeper understanding of environmental science.

In this session, students explored the critical issue of water pollution through an interactive lesson using the *Coastal Watershed Model*. They learned about the differences between point and nonpoint source pollution, identifying how contaminants from various sources—such as factories, farms, urban runoff, and everyday human activities—impact local waterways. By simulating rainfall and observing how pollutants travel through a watershed, participants gained a clearer understanding of how pollution affects rivers, bays, and oceans.

This activity not only reinforced key STEM concepts but also empowered students with knowledge about environmental stewardship and the importance of protecting water resources in their own communities.

11/12-13/2024-Rockport Bay Education Center: Aquatic Education

The *Rockport Bay Education Center* hosted an immersive marine and aquatic science program for **281** high school students from *Calhoun County High School*, providing them with hands-on learning experiences in coastal ecology and environmental science. During the program, each day, students rotated through four interactive learning stations, each designed to deepen their understanding of marine ecosystems. One of the key stations involved the use of *Estuary Monitoring Kits*, where students conducted water quality assessments, measuring parameters such as pH, dissolved oxygen, salinity, and turbidity. In addition to water quality testing, they engaged in species sampling to analyze the biodiversity of the area.

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As part of a real-world challenge, students were tasked with evaluating whether the site location would be suitable for constructing a fast-food restaurant. By analyzing their data collected, they determined that such development would negatively impact the local ecosystem, potentially disrupting water quality and harming marine life. Through this critical thinking exercise, students gained valuable insight into the intersection of environmental science and urban development, reinforcing the importance of sustainable decision-making and conservation efforts.

Media Summary:

- “Expanding educational horizons with Matagorda Bay Mitigation Trust support” By Amy Nowlin -June 20, 2024 <https://www.baycitysentinel.com/news-columnsopinions-lifestyle/expanding-educational-horizons-matagorda-bay-mitigation-trust>