

2013 - 14 Field Trip & Workshop Guide

Texas A&M University at Galveston (TAMUG)

Offered by

Educational Outreach and Sea Camp



TEXAS A&M
UNIVERSITY
GALVESTON

The Department of Educational Outreach at Texas A&M University at Galveston is inarguably best known for its summer Sea Camp program.

In addition to our summer adventures, we offer a variety of field trips and programs throughout the Fall and Spring semesters.

There's a lot to learn about marine life and many ways to go about doing so. Please review the activities listed in this guide. All activities are adaptable and prices will vary accordingly.

- Marine Biology & Sciences Field Trips
- Marine Biology Birthday Parties
- Professional Development & Workshops for Educators
- Scout Programs
- Traveling Presentations and School Visits
- Wetlands Center and Dr. Sammy Ray Oyster Activities



Students excavate a sea turtle nest at our Gulf of Mexico beachfront during Sea Turtle Nesting Biology and Ecology.



Exploring estuarine ecology, and finfish and shellfish life cycles at Galveston Island State Park during the Salt Marsh Field Trip.

Research Vessel Trip - R/V Earl Milan

Duration: 2 - 3 hours Maximum # of participants: 24 Price: \$475 - 575

Learn physical, chemical and biological oceanography aboard TAMUG's 42-foot Research Vessel *Earl L. Milan*. Sort and identify finfish and shellfish from shrimp otter trawl and view results from plankton tow. Sieve mud sampled by a *Ponar*-type benthic grab for annelid worms and other bottom-dwellers. Observe our local marine mammal - the bottlenose dolphin. The air-conditioned cabin is equipped with an electronic microscope with camera and color monitor. Life jackets included. Trip includes a licensed captain, deckhand and our outreach biologist.

Research Vessel Trip - Flying Fish Too

Duration: 2 - 4 hours Maximum # of participants: 34 Price: \$550 - 850

Learn physical, chemical and biological oceanography aboard our 58-foot *Flying Fish Too*. Sample water quality for a handful of critical hydrographic parameters, e.g. water temperature, dissolved oxygen, turbidity and pH, and understand their impacts to estuary biota. Sieve mud sampled by a *Ponar*-type benthic grab for annelid worms and other bottom-dwellers. Observe our local marine mammal - the bottlenose dolphin. The *Flying Fish Too* is suitable for educational-based fishing trips to the Galveston Jetties and inshore bay sites proximate to our campus (definitely a 3- to 4-hour commitment). Life jackets included. Trip includes a licensed captain,

Salt Marsh Trip

Duration: 2 - 3 hours Maximum # of participants: varies Price: \$275 minimum (based on 20 participants)

Wade waist-deep into our local salt marsh getting wet and a little muddy. Seine for inch-long red drum, southern flounder, spotted seatrout and other finfish species too numerous to name. Capture brown shrimp, blue crabs and sea snot! Learn of the Galveston estuary, its ecology and the critical functions of the *Spartina* salt marsh. A closed-toe, lace-up tennis shoe, preferably two, is a must!

Shark Presentation with Student Dissection

Duration: 2 - 3 hours Maximum # of participants: varies Price: \$275 minimum (based on 20 participants and 5 sharks)

Jump into shark-infested waters, figuratively, with this introduction to cartilaginous fishes. Learn the differences between sharks & rays and bony fishes. Hands-on instruction in characteristics distinguishing the more than 360 species of sharks to their eight orders including the bull shark, shortfin mako, horn shark and Atlantic nurse shark. Dissect a dogfish shark with your classmates including stomach contents, the shark heart and a venture into the shark eye.

Shark Presentation without Dissection

Duration: 1 hour minimum Maximum # of participants: varies Price: \$100/ 1st hour (based on 30 participants)

Peek inside TAMUG's teaching collection of sharks and explore the differences between sharks and bony fishes including adaptations reflecting their ecological niches. This exercise is available

Fish Dissection & Fish Printing

Duration: 2 - 3 hours Maximum # of participants: varies Price: \$300 minimum (based on 30 participants)

Examine a half-dozen fish species -all slimy- exploring their specific adaptations related to their habitat and feeding behaviors. Dissect a scaly critter to better understand its similarities, and differences, with ourselves and other vertebrates. Learn the art of Japanese fish-printing, gyotaku - gee-oh-ta-koo, and create an indelible memory of these fishes on a t-shirt.

Sea Turtle Presentation

Duration: 1 hour minimum Maximum # of participants: varies Price: \$100/ 1st hour (based on 30 participants)

Explore sea turtle biology and ecology. Learn the seven species of sea turtles, all of which are listed as threatened or endangered, and which of these species occur in the Gulf of Mexico. Discuss the differences and similarities between freshwater turtles and sea turtles.



This southern flounder is a wonderful teaching tool for fish biology, estuarine ecology and fisheries management. Saltwater recreational fishing in Texas is a \$1 billion industry.



Students haul in the lines for the shrimp trawl aboard the R/V Earl Milan during the Research Vessel Trip.



Stalking blue crabs is labor intensive work at the TAMUG Wetland Center during Blue Crab Biology and Crabbing.

Sea Turtle Nesting Biology & Ecology and NOAA Sea Turtle Research Facility

Duration: 1 hour minimum Maximum # of participants: varies Price: \$125/ 1st hour (based on 30 participants)

Visit the Gulf beachfront and excavate our faux Kemp's ridley nests. Learn sea turtle nesting biology and ecology. Tour the NOAA Sea Turtle Facility and see hundreds of year 0, 1 and 2 loggerhead sea turtles.

Wetlands Center and Dr. Sammy Ray Oyster Activities

Duration: 1 - 4 hours Maximum # of participants: varies Price: \$125 - \$300 (dependent on duration & activity)

Activities offered include blue crab biology, crabbing for blue crabs, oyster reef ecology and microbiology related to oyster disease. Instruction and workshops planned for the center include ornithology, invertebrate zoology, coastal plant and wetland ecology, pollution biology and coastal erosion.

All of our activities and field trips are very popular among student groups as well as educators looking for professional development. Many groups find it enjoyable to schedule a morning activity and an afternoon activity with lunch in the TAMUG cafeteria (or elsewhere) in between activities. Simply let us know the details and we can plan accordingly.

Boy Scouts of America - Merit Badge Series

1. Fish & Wildlife Management and Salt Marsh Field Trip

Duration of Field Trip: 4 - 5 hours Price: \$400 (12 participants or fewer)

Merit Badge Requirements Covered by this Field Trip

- Observe and record 25 species of wildlife. Your list may include mammals, birds, reptiles, amphibians, and fish. Write down when and where each animal was seen.
- Examine the stomach contents of three species of fish and record the findings.
- Describe the meaning and purpose of fish and wildlife conservation and management.
- List and discuss at least three major problems that continue to threaten Texas fish and wildlife resources.
- Describe some practical ways in which everyone can help with the fish and wildlife effort.
- List and describe five major fish and wildlife management practices used by managers in Texas.

2. Oceanography and Vessel Trip aboard the R/V Earl Milan

Duration of Field Trip: 4 - 5 hours Price: \$700

Merit Badge Requirements Covered by this Field Trip

- Name four branches of oceanography. Describe at least five reasons why it is important for people to learn about the oceans.
- Define salinity, temperature, and density, and describe how these important properties of seawater are measured by physical oceanographers.
- List the main salts, gases, and nutrients in sea water. Describe how the animals and plants of the ocean affect the chemical composition of seawater. Explain how differences in evaporation and precipitation affect the salt content of the oceans.
- Describe the biologically important properties of water. Define benthos, nekton, and plankton. Name some of the plants and animals that make up each of these groups. Describe the place and importance of phytoplankton in the oceanic food chain.
- Tow a plankton net from the research vessel or marina bulkhead for approximately 20 minutes. Save the sample, and examine under a Microscope. Identify the three most common types of plankton in the sample.
- Visit both an oceanographic research ship and an oceanographic institute.

Marine Biology Birthday Parties Duration of Party: 2 hours Price: \$200 (based on 20 participants)

Interactive marine biology classroom and instructor, marine-oriented crafts, crabbing, and gift bags for each participant. Additional activities and items can be provided for an additional fee (cake, drinks, veggie/fruit tray, chips/dip, theme plates, napkins, utensils; seining in the salt marsh, research vessel excursion, shark dissection and more.)

Traveling Presentations and School Visits

Our staff regularly visits schools within a reasonable commute and beyond - schedule permitting - for a small fee and permission to distribute Sea Camp program brochures. Our most popular presentation is called 'The Traveling Shark Show.' Please contact us for more information.

Teacher and Educator Workshops

We offer a handful of teacher and educator workshops with a broad range of experiences and science curriculum during the year including invertebrate zoology and wetland ecology. In addition, we often offer this workshop in partnership with the Galveston Bay Foundation and participate in a marsh / wetland restoration project.

Frequently Asked Questions

Who will be our field guides / biologists?

Your field guides are students at Texas A&M University at Galveston. Department of Educational Outreach work together to provide you with knowledgeable and enthusiastic undergraduate and graduate students.

What are the requirements to participate in your field trips?

First you must contact us to schedule your trip. After your trip is scheduled, you will receive a waiver and an invoice. A waiver for each participant must be completed and turned in on the day of the trip along with a roster of all participants. Full payment is due the day of the field trip. We accept check or credit card. What to bring and what to wear will depend on your field trip. You will receive that information after your trip is scheduled.

E-rosters of all attendees are required 48 hours prior to your scheduled field trip, and as soon as possible if requesting a visit to the NOAA Sea Turtle Facility.

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