

Seagrass Bed Field Trip

Bay County—St. Andrews State Park, bayside boat ramp
Tyndall AFB—marina access
Possible: Carl Grey Park (will use FSU bathrooms)

Note: The trip at this time is designed to be completed from shore. Future trips will be focused on the specific environments listed below that will be explored by boat, shore, and/or both.

Grade Level: K-12

Objectives: This field trip will center on exploring seagrass beds and their communities. If a trip is planned for Andrews State Park, sampling in the Gulf of Mexico along the jetties can also be arranged, depending on the activities requested. Within the habitat(s) selected, Schools/classes will select up to 4-6 activities from the tables below to complete in a day trip.

The focus will be for students to be able to describe the major physical, biological and ecological features of each habitat visited during the field trip and discuss their solutions to man's impacts. The discussion and salient points taught will be based on the grade level of the class (see Activity writeups by grade in tables below). In most cases, one location with multiple activities will be all that can be visited in a day trip. Multiple trips through the year can be arranged to cover all of the habitats.

Background: Choctawhatchee and St. Andrew's Bays and the coastal dune lakes in Walton County are economically and ecologically important ecosystems in this region. Not only do they drive a significant component of the economy, but they also provide a critical ecosystem that supports a vast majority of the marine life in this part of the Florida Panhandle. Providing local students an opportunity to see, understand, and experience the animals and habitats firsthand will help build memorable experiences that can help teachers drive home key learnings and the students to develop an appreciation of the importance of these marine ecosystems.

Procedure: After splitting the class(es) into smaller working groups, students will watch and/or participate (depending on age) staff undertake the various sampling activities and lessons described below. E&FCA staff will explain the sampling and assist the group in processing the samples as well as lead the students through the identification of organisms caught and their role in the habitat. Physical characteristics of the water and substrate will be compared to areas without the habitat present to contrast both the number and diversity of the organisms between habitats (where applicable, e.g., seagrass bed vs Gulf of Mexico shoreline).

A typical field trip will be composed of:

1. Introduction and safety rules.
2. Site orientation and schedule.
3. Establishment of groups and escort to stations.
4. Conduct sampling (See activity lists for stations below):

5. After sampling, staff will help students briefly discuss results and observations/address questions;
6. Bathrooms will be available on site as will water, and in some cases shade (tents over stations);
7. After students have rotated through all stations they will either leave or have lunch (brought by students or donated). Discuss overall trip and their questions/impressions.

Materials: clip boards and handouts, Seine net, dip nets, buckets, dissecting trays, aquaria, sediment corer, sieves, water quality testing kits, DO meter, salinity meter, pH meter, ID cards (plant, invertebrate, fish), UW drone (as applicable) and screen,

Activity Time: 1.5 to 3 hours depending on number of activities; choices of activities determined by teachers depending on lesson integration with classroom curriculum and location available for field trip. Students will be broken down into smaller groups for each activity and rotate between activities.

Florida Standards: see Activity Writeups in tables below.

K through 2nd Grade

Station (Required)	Description	Standards
Be the Marine Scientist: Water Quality Field Investigations	Learn the scientific methods of field work and the impact water quality (physical and chemical) has on this important habitat and the critters who live there	SC.1.N.1.1-4; SC.2.N.1.1-6; SC.1.L.14.1; SC.1.E.6.2; SC.2.P.8.5;
Station (Pick one)	Description	Standards
Explore The Seagrass beds	Staff will conduct seine netting and direct students in dip netting across the shallow seagrass beds; Specimens will be collected and put into touch tank and observation tanks and staff will help identify and characterize the critters living in this important nursery habitat and answer questions about their role in the community	SC.1.N.1.1-4; SC.2.N.1.1-6; SC.1.L.14.1; SC.1.L.17.1; SC.2.L.17.1-2;
Investigate the Hardbottom Communities	Using collected hardbottom substrate placed in touch tanks, participants will examine the critters found and how they survive in this habitat and what makes them unique	SC.1.N.1.1-4; SC.2.N.1.1-6; SC.1.L.14.1; SC.1.L.17.1; SC.2.L.17.1-2;
Station (Select 2 to 4 activities for habitat chosen above)	Description	Standards
Piggyback Critters (Both habitats)	Using field microscopes and observation trays, staff will help participants examine the critters that live on the seagrass blades or hard bottom	SC.1.N.1.1-4; SC.2.N.1.1-6; SC.1.L.14.1; SC.1.L.17.1; SC.2.L.17.1-2;
Manatee Biology (Seagrass beds)	A "manatee" will be our guest for participants Q&A as they learn about this and other marine mammals	SC.1.N.1.1-4; SC.2.N.1.1-6; SC.1.L.14.1; SC.1.L.17.1; SC.2.L.17.1-2;
Who Lives in these habitats? (both habitats)	Staff will take cores in seagrass and hardbottom habitat, sieve, and place the critters in dissecting trays for identification and observation	SC.1.N.1.1-4; SC.2.N.1.1-6; SC.1.L.14.1; SC.1.L.17.1; SC.2.L.17.1-2;
Fishing (Both habitats)	Participants will fish the habitat to see what they can catch with staff assistance and guidance	SC.1.N.1.1-4; SC.2.N.1.1-6; SC.1.L.14.1; SC.1.L.17.1; SC.2.L.17.1-2;
Plastic Pollution, does it ever go away?	Students will look for and collect plastic pollution along the shoreline; staff will sample the water column and sediment and filter for microplastics that will be examined under field microscopes; what can be done about it?	SC.K.N.1.1; SC.1.N.1.1; SC.1.N.1.4; SC.2.N.1.1-6

Note: For this age group, samples will be collected by staff and placed in touch tanks, aquaria or dissecting trays for observation and participant study. Some entry to the water is required to observe seine netting and to try dip netting for samples.

3rd through 5th Grade¹

Station (Required)	Description	Standards
Be the Marine Scientist: Water Quality Field Investigations	Learn the scientific methods of field work and the impact water quality (physical and chemical) has on this important habitat and the critters who live there	SC.3.N.1.1-3, 5-7; SC.4.N.1.1-3, 5-7; SC.5.N.1.2; SC.5.N.2.1 SC.3.P.8.1
Station (Pick one)	Description	Standards
Explore The Seagrass beds	Staff will conduct seine netting and direct students in dip netting across the shallow seagrass beds; Specimens will be collected and put into touch tank and observation tanks and staff will help identify and characterize the critters living in this important nursery habitat and answer questions about their role in the community	SC.3.N.1.1-3, 5-7; SC.4.N.1.1-3, 5-7; SC.5.N.1.2; SC.5.N.2.1; SC.3.L.15.1; SC.3.L.17.1; SC.4.L.16.2; SC.4.L.17.2-4; SC.5.L.17.1
Investigate the Hardbottom Communities	Using collected hardbottom substrate placed in touch tanks, participants will examine the critters found and how they survive in this habitat and what makes them unique	SC.3.N.1.1-3, 5-7; SC.4.N.1.1-3, 5-7; SC.5.N.1.2; SC.5.N.2.1; SC.3.L.15.1; SC.3.L.17.1; SC.4.L.16.2; SC.4.L.17.2-4; SC.5.L.17.1
Station (Select 2 to 4 activities for habitat chosen above)	Description	Standards
Piggyback Critters (Both habitats)	Using field microscopes and observation trays, staff will help participants examine the critters that live on the seagrass blades or oyster beds	SC.3.N.1.1-3, 5-7; SC.4.N.1.1-3, 5-7; SC.5.N.1.2; SC.5.N.2.1; SC.3.L.15.1; SC.3.L.17.1; SC.4.L.16.2; SC.4.L.17.2-4; SC.5.L.17.1
Scallops, not just for eating (Seagrass beds)	Scallop behavior and biology will be discussed with specimens collected by staff and placed in aquaria.	SC.3.N.1.1-3, 5-7; SC.4.N.1.1-3, 5-7; SC.5.N.1.2; SC.5.N.2.1; SC.3.L.15.1; SC.3.L.17.1; SC.4.L.16.2; SC.4.L.17.2-4; SC.5.L.17.1
Manatee Biology (Seagrass beds)	A “manatee” will be out guest for participants Q&A as they learn about this and other marine mammals	SC.3.N.1.1-3, 5-7; SC.4.N.1.1-3, 5-7; SC.5.N.1.2; SC.5.N.2.1; SC.3.L.15.1; SC.3.L.17.1; SC.4.L.16.2; SC.4.L.17.2-4; SC.5.L.17.1
Who Lives in these habitats? (both habitats)	Staff will take cores in seagrass and hardbottom habitat, sieve, and place the critters in dissecting trays for identification and observation	SC.3.N.1.1-3, 5-7; SC.4.N.1.1-3, 5-7; SC.5.N.1.2; SC.5.N.2.1; SC.3.L.15.1; SC.3.L.17.1; SC.4.L.16.2; SC.4.L.17.2-4; SC.5.L.17.1
Fishing (Both habitats)	Participants will fish the habitat to see what they can catch with staff assistance and guidance	SC.3.N.1.1-3, 5-7; SC.4.N.1.1-3, 5-7; SC.5.N.1.2; SC.5.N.2.1; SC.3.L.15.1; SC.3.L.17.1; SC.4.L.16.2; SC.4.L.17.2-4; SC.5.L.17.1
Plastic Pollution, does it ever go away?	Students will look for and collect plastic pollution along the shoreline; staff will sample the water column and sediment and filter for microplastics that will be examined under field microscopes; what can be done about it?	SC.3.N.1.1; SC.3.N.1.2; SC.3.N.1.6; SC.4.N.1.1-3; SC.4.L.17.4; SC.5.N.1.1; SC.5.N.1.

¹ Note: For this age group, samples will be collected by staff and placed in touch tanks, aquaria or dissecting trays for observation and participant study. Some entry to the water is required to observe seine netting and to try dip netting for samples.

6th through 8th Grade

Station (Required)	Description	Standards
Be the Marine Scientist: Water Quality Field Investigations	Learn the scientific methods of field work and the impact water quality (physical and chemical) has on this important habitat and the critters who live there	SC.6.N.1.5; SC.7.N.1.1; SC.7.N.1.3; SC.7.L.17.3; SC.8.N.1.1; SC.8.N.4.1
Station (Pick One)	Description	Standards
Explore The Seagrass beds	Staff will direct students in seine and dip netting across the shallow seagrass beds to help identify and characterize the critters living in this important nursery habitat	SC.6.N.1.5; SC.6.L.15.1; SC.7.L.17.1; SC.7.L.17.2; SC.7.L.17.3; SC.8.N.1.1
Investigate the Hardbottom Communities	Using collected hardbottom substrate in touch tanks, participants will examine the critters found and how they survive in this habitat	SC.6.N.1.5; SC.6.L.15.1; SC.7.L.17.1; SC.7.L.17.2; SC.7.L.17.3; SC.8.N.1.1
Station (Select 2 to 4 activities for habitat chosen above)	Description	Standards
Piggyback Critters (Both habitats)	Using field microscopes and observation trays, staff will help participants examine the critters that live on the seagrass or oyster beds	SC.6.N.1.5; SC.6.L.15.1; SC.7.L.17.1; SC.7.L.17.2; SC.7.L.17.3; SC.8.N.1.1
Scallops, not just for eating (Seagrass beds)	Scallop behavior and biology will be discussed with specimens collected by staff and placed in aquaria.	SC.6.L.15.1; SC.6.L.14.3; SC.7.L.17.1; SC.7.L.17.2; SC.7.L.17.3; SC.8.N.4.1
Manatee Biology (Seagrass beds)	A "manatee" will be out guest for participants Q&A as they learn about this and other marine mammals	SC.6.L.15.1; SC.6.L.14.3; SC.7.L.17.1; SC.7.L.17.2; SC.7.L.17.3; SC.8.N.4.1
Who Lives in these habitats? (both habitats)	Staff will take cores in seagrass and hardbottom habitat, sieve, and place the critters in dissecting trays for identification and observation of these members of the nursery habitat they live within	SC.6.N.1.5; SC.6.L.15.1; SC.7.L.17.1; SC.7.L.17.2; SC.7.L.17.3; SC.8.N.1.1
Squid or Octopus Dissection (Both habitats)	Depending on availability, dissection of one of these will be made available in the field with field equipment and staff oversight	SC.6.L.15.1; SC.6.L.14.3; SC.7.L.17.1; SC.7.L.17.2; SC.7.L.17.3; SC.8.N.4.1
Fishing (Both habitats)	Participants will fish the habitat to see what they can catch with staff assistance and guidance	SC.6.L.15.1; SC.6.L.14.3; SC.7.L.17.1; SC.7.L.17.2; SC.7.L.17.3; SC.8.N.4.1
Plastic Pollution, does it ever go away?	Students will look for and collect plastic pollution along the shoreline; students will sample the water column and sediment and filter for microplastics that will be examined under field microscopes; what can be done about it?	SC.7.E.6.6; SC.8.N.1.1;

Note: Students will be required to get permission to enter the water to conduct the sampling activities under E&FCA guidance.

9th through 12th Grade

Station (Required)	Description	Standards
Be the Marine Scientist: Water Quality Field Investigations	Learn the scientific methods of field work and the impact water quality (physical and chemical) has on this important habitat and the critters who live there	SC.912.L.17.3; SC.912.L.17.7; SC.912.L.17.16; SC.912.N.1.6;
Station (Pick one)	Description	Standards
Explore The Seagrass beds	Staff will direct students in seine and dip netting across the shallow seagrass beds to help identify and characterize the critters living in this important nursery habitat	SC.912.L.15.6; SC.912.L.17.1; SC.912.L.17.2; SC.912.L.17.6;
Investigate the Hardbottom Communities	Using collected hardbottom substrate in touch tanks, participants will examine the critters found and how they survive in this habitat	SC.912.L.15.6; SC.912.L.17.1; SC.912.L.17.2; SC.912.L.17.6;
Station (Select 2 to 4 activities for habitat chosen above)	Description	Standards
Piggyback Critters (Both habitats)	Using field microscopes and observation trays, staff will help participants examine the critters that live on the seagrass or oyster beds	SC.912.L.15.6; SC.912.L.17.1; SC.912.L.17.2; SC.912.L.17.6;
Scallops, not just for eating (Seagrass beds)	Scallop behavior and biology will be discussed with specimens collected by staff and placed in aquaria.	SC.912.N.1.1; SC.912.N.1.6; SC.912.L.17.6;
Manatee Biology (Seagrass beds)	A "manatee" will be our guest for participants Q&A as they learn about this and other marine mammals	SC.912.L.15.3; SC.912.L.17.16; SC.912.L.17.20
Who Lives in these habitats? (both habitats)	Staff will take cores in seagrass and hardbottom habitat, sieve, and place the critters in dissecting trays for identification and observation of these members of the nursery habitat they live within	SC.912.L.15.6; SC.912.L.17.1; SC.912.L.17.2; SC.912.L.17.6;
Squid or Octopus Dissection (Both habitats)	Depending on availability, dissection of one of these will be made available in the field with field equipment and staff oversight	SC.912.N.1.1; SC.912.N.1.6; SC.912.L.17.6;
Fishing (Both habitats)	Participants will fish the habitat to see what they can catch with staff assistance and guidance	SC.912.L.15.3; SC.912.L.17.16; SC.912.L.17.20
Plastic Pollution, does it ever go away?	Students will look for and collect plastic pollution along the shoreline; Students will sample the water column and sediment and filter for microplastics that will be examined under field microscopes; what can be done about it?	SC.912.L.17.16;

Note: Students will be required to get permission to enter the water to conduct the sampling activities under E&FCA guidance.