

## Coastal Dune Lakes Field Trip

Walton County—Grayton Beach State Park  
Walton/Bay County—Camp Helen State Park

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 coastal dune lakes and their communities. For each trip, sampling in the Gulf of Mexico can also be arranged to compare against what is found in the dune lake, 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: The coastal dune lakes in Walton/Bay Counties are economically and ecologically important ecosystems in this region. They are unique in the world, and they provide a critical ecosystem that supports a vast array of birds, reptiles, amphibians, fresh/estuarine fish, and other marine life. 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., dune lake vs Gulf of Mexico).

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 2<sup>nd</sup> Grade

Station (Required)	Description	Standards
Be the Marine Scientist: Water Quality Field Investigations	Ever wonder why coastal dune lakes have the color of Coca Cola? Learn the scientific methods of field work and you will learn about the impact water quality (physical and chemical) has on this important habitat and compare it to the Gulf of Mexico adjacent to the Dune Lake	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;
Explore the Dune Lakes/Beach	Using Seine nets and dip nets, participants will work with staff to catch and examine the critters that live in coastal dune lakes and the adjacent Gulf of Mexico	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)	Description	Standards
Ghost Crab Observations	Staff will teach participants about the anatomy and behavior of the ghost crab and its role in the beach habitat while trying to catch some!	SC.1.N.1.1-4; SC.2.N.1.1-6; SC.1.L.14.1; SC.2.L.14.1; SC.1.L.17.1; SC.2.L.17.1-2;
Turtle Games and Talks	Using games to simulate what a turtle faces coming ashore to nest at night, participants will learn about each species of turtle and the conservation measures needed to protect this group of species	SC.1.N.1.1-4; SC.2.N.1.1-6; SC.1.L.14.1-3; SC.2.E.6.1-3; SC.1.E.6.1-3; SC.2.P.8.5; SC.1.L.17.1; SC.2.L.17.1-2; SC.2.L.16.1
Critters the eye can't see	Using microscopes and large picture guides, participants will look at the critters caught in plankton nets by the staff to learn about these important critters	SC.1.N.1.1-4; SC.2.N.1.1-6; SC.1.L.14.1-3; SC.2.E.6.1-3; SC.1.E.6.1-3; SC.2.P.8.5; SC.1.L.17.1; SC.2.L.17.1-2; SC.2.L.16.1
Boardwalk Exploration	Using binoculars to identify the birds and guides to identify the animal tracks, we will find out who uses the dunes and dune lake	SC.1.N.1.1-4; SC.2.N.1.1-6; SC.1.L.14.1; SC.2.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.

### 3<sup>rd</sup> through 5<sup>th</sup> Grade

Station (Required)	Description	Standards
Be the Marine Scientist: Water Quality Field Investigations	Ever wonder why coastal dune lakes have the color of Coca Cola? Learn the scientific methods of field work, you will learn about the impact water quality (physical and chemical) has on this important habitat and compare it to the Gulf of Mexico adjacent to the Dune Lake	SC.3.N.1.1; SC.3.N.1.3; SC.3.N.1.6; SC.3.N.1.7; SC.4.N.1.1; SC.5.N.2.1;
Explore the Dune Lakes/Beach	Using Seine nets and dip nets, participants will work with staff to catch and examine the critters that live in coastal dune lakes and the adjacent Gulf of Mexico	SC.3.L.15.1; SC.4.N.1.1; SC.4.N.1.6; SC.4.N.1.7; SC.5.L.17.1; SC.4.L.17.4
Station (Select 1)	Description	Standards
Ghost Crab Observations	Staff will teach participants about the anatomy and behavior of the ghost crab and its role in the beach habitat while trying to catch some!	SC.3.N.1.1; SC.3.N.1.6; SC.4.N.1.1; SC.4.N.1.3; SC.5.L.17.1
Turtle Games and Talks	Using games to simulate what a turtle faces coming ashore to nest at night, participants will learn about each species of turtle and the conservation measures needed to protect this group of species	SC.3.L.15.1; SC.3.L.17.1; SC.4.N.1.1; SC.4.N.1.3; SC.5.L.17.1
Critters the eye can't see	Using microscopes and large picture guides, participants will look at the critters caught in plankton nets by the staff to learn about these important critters	SC.3.L.15.1; SC.4.N.1.1; SC.4.N.1.6; SC.4.N.1.7; SC.5.L.17.1; SC.4.L.17.4;
Boardwalk Exploration	Using binoculars to identify the birds and guides to identify the animal tracks, we will find out who uses the dunes and dune lake	SC.3.L.15.1; SC.4.N.1.1; SC.4.N.1.6; SC.4.N.1.7; SC.5.L.17.1; SC.4.L.17.4;
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.

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.

## 6<sup>th</sup> through 8<sup>th</sup> Grade

Station (Required)	Description	Standards
Be the Marine Scientist: Water Quality Field Investigations	Ever wonder why coastal dune lakes have the color of Coca Cola? Learn the scientific methods of field work, you will learn about the impact water quality (physical and chemical) has on this important habitat and compare it to the Gulf of Mexico adjacent to the Dune Lake	SC.6.N.1.5; SC.7.N.1.1;
Explore the Dune Lakes/Beach	Using Seine nets and dip nets, participants will work with staff to catch and examine the critters that live in coastal dune lakes and the adjacent Gulf of Mexico	SC.6.L.15.1; SC.7.L.17.1; SC.7.L.17.2; SC.7.L.17.3;
Station (Select 1)	Description	Standards
Ghost Crab Observations	Staff will teach participants about the anatomy and behavior of the ghost crab and its role in the beach habitat while trying to catch some!	SC.6.N.1.5; SC.7.N.1.1; SC.6.L.15.1; SC.7.L.17.1
UW ROV exploration	Using an UW ROV, we will explore the bottom of the coastal dune lakes and nearby Gulf of Mexico to compare and contrast the habitats and critters seen.	SC.8.N.4.1; SC.6.L.15.1; SC.7.L.17.2; SC.7.L.17.3
Critters the eye can't see	Using microscopes and large picture guides, participants will look at the critters caught in plankton nets by the staff to learn about these important critters	SC.8.L.18.1; SC.6.L.15.1; SC.7.L.17.1; SC.7.L.17.2; SC.7.L.17.3;
Shoreline critters	Using cores and sieves, students will examine the critters found along the Gulf shoreline and why this air/water interface is so important to birds and fish	SC.8.L.18.1; SC.6.L.15.1; SC.7.L.17.1; SC.7.L.17.2; SC.7.L.17.3;
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.

## 9<sup>th</sup> through 12<sup>th</sup> Grade

Station (Required)	Description	Standards
Be the Marine Scientist: Water Quality Field Investigations	Ever wonder why coastal dune lakes have the color of Coca Cola? Learn the scientific methods of field work, you will learn about the impact water quality (physical and chemical) has on this important habitat and compare it to the Gulf of Mexico adjacent to the Dune Lake	SC.912.L.17.3; SC.912.L.17.7; SC.912.L.17.13; SC.912.L.17.16; SC.912.N.1.6;
Explore the Dune Lakes/Beach	Using Seine nets and dip nets, participants will work with staff to catch and examine the critters that live in coastal dune lakes and the adjacent Gulf of Mexico	SC.912.L.15.6; SC.912.L.17.1; SC.912.L.17.2; SC.912.L.17.6;
Station (Select 1)	Description	Standards
Ghost Crab Observations	Staff will teach participants about the anatomy and behavior of the ghost crab and its role in the beach habitat while trying to catch some!	SC.912.N.1.1; SC.912.N.1.6; SC.912.L.17.6;
UW ROV exploration	Using an UW ROV, we will explore the bottom of the coastal dune lakes and nearby Gulf of Mexico to compare and contrast the habitats and critters seen.	SC.912.L.15.3; SC.912.L.17.16; SC.912.L.17.20
Critters the eye can't see	Using microscopes and large picture guides, participants will look at the critters caught in plankton nets by the staff to learn about these important critters	SC.912.L.15.6; SC.912.L.17.1; SC.912.L.17.2; SC.912.L.17.6;
Shoreline critters	Using cores and sieves, students will examine the critters found along the Gulf shoreline and why this air/water interface is so important to birds and fish	SC.912.L.17.12; SC.912.L.15.6; SC.912.L.17.1; SC.912.L.17.2; SC.912.L.17.6;
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.