

EDISTO BEACH

STATE PARK

8377 State Cabin Road
Edisto Island, SC 29438
Phone: (843) 869-4430
Fax: (843) 869-4428



Edisto Beach State Park, located on a remote sea island rich in Native American history, was originally developed in the 1930s by the Civilian Conservation Corps. A variety of shells dot the 1.5 mile beach and some of the tallest palmetto trees in the state can be seen throughout the park and Edisto Island.

This 1,255-acre park includes a dense maritime forest and an expansive salt marsh where visitors can explore the wonders of nature. The park offers a day-use area for beach access and a four-mile nature trail that winds through the maritime forest with beautiful vistas overlooking the salt marsh.

Directions

Beach Programs (3rd & 5th grades)

From Hwy. 17: Take Hwy 174 22 miles to entrance of the town of Edisto Beach. As you enter the town limits, the entrance to the park is on the left. Check in with the attendant.

Salt Marsh Programs (4th grade)

From Hwy 17: Take Hwy 174 20 miles to Palmetto Rd. Turn right on Palmetto Rd. and drive 1.4 miles. Veer left to the Environmental Learning Center. Park at the boat ramp parking lot and follow the trail to the Environmental Learning Center.

Edisto Beach



Reservations and Program Information

For reservations, contact:
Andrea Grabman
Interpretive Ranger
Phone: (843) 869-4426
Fax: (843) 869-4428
agrabman@scprt.com

At the Park

Please remember to bring any pre-site materials that need to be returned. A Park Ranger will meet you at the parking area for your specific program.

Facilities

The park offers bathroom facilities, outdoor showers, grills, picnic areas, 1.25 miles of undeveloped beach, miles of nature trails through a maritime forest, and marsh boardwalk, which connects to the nature trail. There also is the interactive Environmental Learning Center.

The park is open 365 days a year with hours varying by season. The park also offers camping, cabin rental and a boat launch.

Since the park has picnic areas, feel free to bring lunches to eat after the program. There are garbage cans nearby; please help keep our park clean!

Outdoor grills are also available if you want to cook. Grocery stores are within walking distance of the park.

Meeting Time: School groups should arrive at the park 15 minutes prior to the time of the field trip. This will give groups time to gather their items and go to the restrooms.

What You Should Bring

Students:

- insect repellent
- sunscreen

Teachers:

- first-aid kits

What to Wear on the Field Trip

Participants need to wear closed-toe shoes, such as tennis shoes, at all times. Sandals and flip flops are not allowed on the program but may be worn afterwards.

Dress appropriately for the weather. Students will be outside, so be prepared for cold, windy or rainy weather.

All students are required to have nametags. Please make sure that names are legible. A piece of masking tape works well. Remember that it is windy and wet at the beach, so nametags need to be secure and durable.

During the Field Trip

While with the park interpreter, students will not be allowed to go into the ocean or take off their shoes.

Environmental Learning Center

The Environmental Learning Center is located approximately 15 minutes from the beach and is self-guided. It is open Tuesday through Saturday – 9 a.m. until 4 p.m.

Groups must remain together at all times and be supervised. This applies for our dock area also.

Each group must consist of no more than ten students and at least one chaperone.

No more than two groups of ten students each are allowed in the exhibit hall at one time. The rest of the students are asked to remain quietly outside on the deck.

No running or shouting allowed within the exhibit hall or the dock area. Please be considerate of other visitors using the center.

Reservation Procedures and Information

Reservations must be made 14 days in advance. To make a reservation for a field study program, please complete the fol-



lowing registration form and forward to the park by:

- 1) Mail: Edisto Beach State Park
8377 State Cabin Road
Edisto Island, SC 29438
- 2) FAX: (843) 869-4428
ATTN: Andrea Grabman
- 3) Email: agrabman@scprt.com

You will receive a confirmation letter within five business days after receipt of the registration form.

PLEASE NOTE: Field trip dates are not confirmed until receipt of confirmation letter!

Rules of Conduct and Park Etiquette

Teachers: Please review the following Rules of Conduct and Park Etiquette with your students before your field trip. Students who refuse to follow the rules will be asked to leave the program. Thank you!

Rules of Conduct:

- Stay with your teacher, chaperone or assigned park naturalist.
- Listen and follow directions given to you by the park naturalist.
- Stay on all paths.
- Do not walk on the dunes or dune grasses.
- Do not pick any plants.
- Do not take live animals or live shells.
- Keep the park clean by picking up your trash.

Park Etiquette:

Each living and non-living part of this resource must be treated respectfully and remain on the park. Walk carefully, touch gently and explore meaningfully. Leave organisms in their homes. Carry home each item that you bring to the park (except trash that has been properly disposed of). Stay together as a group.

Teacher and Chaperone Expectations:

- Teachers and chaperones are in charge of student discipline at all times.
- Teachers and chaperones are expected to participate in all programs.
- Please do not move picnic tables.



Registration Form



Program: The Coast in Motion!

Grade Level: 5th

Program Date: 1st Choice: _____ Arrival Time: _____

2nd Choice: _____ Arrival Time: _____

3rd Choice: _____ Arrival Time: _____

Fee Schedule

10-25 students.....	\$20.00
26-40 students.....	\$40.00
41-60 students.....	\$60.00

Fees are normally due with reservation form, but we realize this is not always possible. Please indicate below which fee schedule will best suit your school:

Fees of \$ _____ are enclosed with registration form.

Fees of \$ _____ will be paid on day of field trip.

Checks may be made out to Edisto Beach State Park.

School Name: _____

School Address: _____

E-mail Address: _____

Contact Name: _____

School Phone Number & Contact Hours: _____

Number of Students: _____ *Number of Chaperones: _____

Special Needs: _____

**The required number of chaperones is one per every ten students.*



Edisto Beach State Park: *Pre-Site*

Content Area:

Science

Grade Level:

5

Time to Complete:

30 minutes

Title of Program:

The Coast in Motion!

*Materials will be mailed prior to your field trip.

Magnifying glasses and sand slides must be returned to the park on the day of the field trip.

Teacher Preparation

- Review Rules of Conduct and Park Etiquette with students.
- Read "Teacher Background".
- Complete Pre-site activities.

Teacher Background

Beach sand is composed mainly of crushed rocks. In South Carolina, beach sand is primarily composed of the mineral quartz. The shiny material that causes the sand to "sparkle" is the mineral mica. Crushed sea shells and organic matter are additionally found in beach sand.

Where does the sand on the SC coast come from? Sand is formed as large mountain rocks are weathered, or worn down, by wind and water. These small rock fragments are then transported to the coast by rivers. Additionally, sand from the continental shelf is pushed onto the beaches through wave action. The longshore drift causes sand to migrate to either the north or the south, transporting it from one barrier island to the next and constantly changing the shape of the islands.

Resources

Carolina Rocks! – The Geology of South Carolina by Carolyn Hanna Murphy

Living with the South Carolina Coast by Gered Lennon

South Carolina State Standards Addressed

Standard 5-3:

The student will demonstrate an understanding of features, processes and changes in Earth's land and oceans. (Earth Science)

Indicators:

5-3.1 Explain how natural processes (including weathering, erosion, deposition, landslides, volcanic eruptions, earthquakes and floods) affect Earth's oceans and land in constructive and destructive ways.

Material/Equipment/Resources

- Rules of Conduct and Park Etiquette
- Student worksheets – Beach Sand Characteristics (provided by the park)
- Answer Key – Beach Sand Characteristics (provided by the park)
- Sample of beach sand*
- Magnifying glasses (class set of 30)*
- Slides of sand*
- Tape
- Crayons or markers
- Microscope



USGS: Coastal Change
<http://pubs.usgs.gov/circ/c1075/change.html>

The Encyclopedia of Earth: Coastal barriers in the United States
http://www.eoearth.org/article/Coastal_barriers_in_the_United_States

Lesson Description

The following activity was designed for teachers to familiarize the students with beach sand and with some of the terms that will be used during the field trip.

1) Discussion:

Begin the lesson by probing the students for a definition of "beach sand".
(What is sand made of?)
Ensure that students understand that beach sand is not soil or dirt.

A: Beach sand is mostly crushed rocks with small bits of crushed shells. In South Carolina, beach sand is mainly composed of the mineral quartz.

Discuss the origin of the sand: weathered rock material originating in the mountains or sediment from the submerged continental shelf that was brought on-shore.

Have the students brainstorm how sand was transported to the beach.
(How did the sand get to the beach?)

A: Rivers transport the weathered rocks from the mountains to the coast. Waves push sediment from the continental shelf onto the beaches.

Discuss the longshore drift: the process that moves sediment and water along the continental edge. The longshore drift moves sand from island to island and constantly changes the shape of barrier islands.

2) Activity: Exploring Beach Sand

Materials: Park provided materials – *
(5) Slides of beach sand:

- Edisto Beach shoreline
- Edisto Beach dunes
- Jones Beach, NY
- Panama City, FL
- Cancun, Mexico

* Please return to park on the day of the field trip!

Teacher provided materials – Microscope

Have the students view the slide samples under a microscope. If there is a microscope available that will project an image onto a screen, this activity may be done as a class activity.

Ask the students how the different sand samples are alike and how they are different.

A: The main similarities and differences will be the color, size and shape of the sand grains.

Have the students brainstorm reasons for the differences in the samples.

A: The samples came from different types of rocks/minerals in various regions.

Compare the two sample slides from Edisto Beach (shoreline and dune samples).

Ask the students what the main difference is between these two samples from the same beach.

A: the size of the sand grains

Ask the students why there would be a difference in grain size between a sample collected from the shoreline versus a sample collected from the sand



dunes of the same beach.

A: Sand is moved by the water and the wind. The smaller grains of sand are lighter and can be moved further (into the dunes) while the larger grains of sand do not move as far (left at the shoreline).

3) Activity: Beach Sand Characteristics

Materials:

Park provided materials

- Answer key/instructions
 - Student worksheets
 - Sand samples
 - * Magnifying glasses
- * Please return to park on the day of the field trip!

Teacher provided materials

- Crayons or markers
- Tape

4) Have students become familiar with the following vocabulary:

barrier island: an elongated island of sand separated from the mainland by a body of water

continental shelf: the sloping, submerged edge of the continent. The point at which the continental shelf steeply "drops off" is termed the continental slope.

dune: a mound of sand built by the force of the wind

erosion: the act of wearing away or removing something

deposition: the act of depositing or causing something to settle

groin: a small structure extending from the shore that was built to entrap shifting sands and protect a beach from erosion

hurricane: a violent tropical storm with heavy rain and winds in excess of 74 mph

inlet: the opening between barrier is-

lands

jetty: a structure extending from the shore that influences currents or tides and protects a shoreline from erosion. Jetties often protect the entrance to harbors and help to maintain channel depths.

longshore drift: the current in the surf zone that moves parallel to shore. It is generated by waves breaking at an angle to the shoreline.

marsh: a wetland with grassy vegetation. Marshes are periodically flooded by the tides and are typically found in low energy areas behind an island.

over-wash: the process of carrying sand from the seaside to the landside by waves washing over an island

sediment: small, weathered rock fragments that are transported by wind and water

tides: the alternating rise and fall of the ocean surface. Tides are caused by the gravitational pull of the sun and moon on large bodies of water.





Edisto Beach State Park: *On-Site*

Content Area:

Science

Grade Level:

5

Time to Complete:

90 minutes

Title of Program:

The Coast In Motion!

ies and inlets).

5-3.6 Explain how human activity (including conservation efforts and pollution) has affected the land and the oceans of Earth.

Program Description

Located along the Atlantic coast, Edisto Beach State Park is an ideal environment to study coastal geology. Students will participate in hands-on field studies that will demonstrate the dynamic nature of the coast and will investigate the coastal processes that affect the geological features of the coastal zone. Upon completion of this field trip, students will understand that the coast is constantly changed by erosion, deposition and human impact.

Objectives

The students will:

- 1) Investigate the characteristics of beach sand.
- 2) Describe how the coast is constantly changed by erosion, deposition and human impact.
- 3) Model the longshore drift, seasonal waves and the impact of coastal storms.
- 4) Construct groins and seawalls and describe their effect on the coast.

Focus Questions

1. Explain how tides affect movement of sand.
2. Describe the movement of waves.
3. What affect does the longshore drift have on sand transport?
4. Explain the effect sea walls have on the coast.
5. How do hurricanes change the geology of barrier islands?
6. Explain the saying, "The coast is always

South Carolina State Standards Addressed

Standard 5-1:

The student will demonstrate an understanding of scientific inquiry, including the foundations of technological design and the processes, skills and mathematical thinking necessary to conduct a controlled scientific investigation.

Indicators:

5.16 Evaluate results of an investigation to formulate a valid conclusion based on evidence and communicate the findings of the evaluation in oral or written form.

Standard 5-3:

The student will demonstrate an understanding of the features, processes and changes in Earth's land and oceans. (Earth Science)

Indicators:

5-3.4 Explain how waves, currents, tides and storms affect the geologic features of the coastal zone (including beaches, barrier islands, estuar-



in motion.”

Materials/Equipment/Resources

All materials and equipment will be provided by the park.

Procedures

1. Arrive at Park. Use restrooms located near picnic shelter #1 where the park staff will meet you.
2. Students will participate in ranger-guided activities with teacher and chaperone assistance.

The Coast In Motion (used with permission from Elizabeth F. King)

1. Students will examine the characteristics of a beach and predict whether the tide is coming in (flowing) or going out (ebbing). A marker will be placed at the shoreline and viewed at the end of the program.
 2. Students will review how water and wind transport sand.
 3. Students will observe waves and model a wave’s movement by using a sheet and hula hoops.
 4. Students will construct a barrier island in the sand and model the tides, waves and longshore drift.
 5. Using the model of the barrier island, students will construct groins and a sea wall and demonstrate their effect on the coast.
 6. The effect of hurricanes on land will be demonstrated as students transfer sand from the coastal side of a barrier island model to the marsh side.
 7. Students will conclude the program by checking the marker to determine if the tide is ebbing or flowing.
3. Optional teacher-led activity – Beaches On the Move! (The park will provide all materials and an activity guide.)



Edisto Beach State Park: *Post-Site*

Content Area:

Science

Grade Level:

5

Time to Complete:

Title of Program:
The Coast In Motion!

the waves, wind and geographical features of the coast.)

Assessment/Extension Activity

The following activity was designed to assess and reinforce the material covered on the field trip to Edisto Beach State Park.

Activity: Barrier Island Features

Materials: barrier island photos (provided by the park)

Divide the class into groups and pass out copies of the barrier island photos. Have the students describe how waves, currents, tides and/or storms affect the geological features shown in each of the photos.

Extension Ideas:

Activity: Longshore Drift

Have the students write a paragraph explaining why children who are playing in the surf tend to move to either the north or the south of their original location.

(The longshore drift is a current that moves along the continental edge. It is generated by waves breaking at an angle to the shoreline. Its energy transports objects to either the north or the south depending on

Edisto Beach: *Post-Site*



Barrier Island Photos

COPY ME!



Eroding Dune Line



Inlet at North End of Beach



Groin



Dead & Live Trees on Beach



Overwash on Back Side of Dunes



Seawall in Front of House

