

Guided Nature Hike

What You Can Expect

A walking field trip to the estuary can easily be incorporated into your curriculum as many North Carolina curricular objectives in science, social studies, and language arts are addressed.

After a short boat ride to the Rachel Carson site, the interpretive walk begins at a salt panne, where the water comes in on the high tide and is trapped as the tide recedes. As the water evaporates, the salinity in the salt panne may reach 45 ppt (parts per thousand), whereas the ocean is usually 35 ppt. The marsh begins at the edge of the panne. Here students can identify plants such as salt marsh cordgrass, sea ox-eye, sea lavender, glasswort, and black needle rush. The walk across the dredge-spoil island exposes students to dune colonization by sea oats and plant succession, including wild asparagus and Spanish Bayonet. When students emerge onto the tidal flat they find a new wealth of flora and fauna.



In addition, students gain new understanding that an estuary can be a tough place to live. With tidal action causing great variation in temperature, turbidity, water depth and salinity, the plants and animals that live in this world have adapted and learned to use this variety to their advantage. For example, blue crabs need high salinity for their eggs to hatch and the juvenile crabs to develop, so they move to areas that meet those needs. Yet adults flourish in lower salinity, so you will find the largest crabs in less saline areas of the estuary. Other animals use the shallow waters of the marsh and mudflat to hide from larger predators. Periwinkles, vegetarian snails that feed on algae growing on the mud and salt marsh grasses, crawl up the grass stems as the tide comes in to escape being eaten by the fish and crabs that come in with the tide.

The excursion around the island gives students the chance to investigate the effects of feral horses living on an estuarine island. Students can learn how the horses search out water and food, and how they have adapted to the environment. This study is particularly valuable for high school biology objectives.

Given sufficient time, groups proceed across a tidal flat to Bird Shoals, which are mostly covered at high tide. These large expanses of shallow sound beach, located directly inside Beaufort Inlet between Bogue Banks and Shackleford Banks, offer students an excellent area for finding sandy bottom dwellers. Locating sand dollars, both shell-remains and living, is exciting for all ages. In addition, students often discover live cockles, scallops, tube worms, horseshoe crabs and fish. Occasionally live rays, egg cases of whelks and other shelled mollusks, worms, and skates can be found.

The trip will continue by following the horse trails across the island, allowing groups to see the effect of salt spray on the canopy. The shrub thicket includes live oak, red cedar, wax myrtle, and toothache trees, along with a variety of other plants that have taken root in the dredge-spoil of times past. Emerging back on Taylor's Creek, students will walk along another salt marsh/ mudflat to return to the boat pick-up point.

After completing the field experience, students should be able to:

- Describe an estuary.
- Explain the causes and diversity of conditions in an estuarine system.
- Compare and contrast the lifestyle of two invertebrates living on a tidal flat.
- Draw a food web of estuarine animals.
- Describe the ecological sensitivity of an estuarine system.
- Debate the roles of the horse population on the island.

Our staff looks forward to helping your group have a successful, memorable and educational field experience at the Rachel Carson Reserve.

Please call or email Education Coordinator [Lori Davis](#) at 252-838-0883 with any questions about Guided Nature Hike trips.