

Kids' pages

Summer 2022 issue

Q Where does sand come from?

A If you have visited a beach on the Gulf coast, you may have wondered how the sand gets there and where it comes from. The sand found on any particular beach is a product of that area's surrounding environment. That means that the sand on every beach is unique. Oftentimes, sand is formed from the process of weathering and erosion of rocks. Weathering occurs when different elements in the environment such as rain, wind, or sunshine break a larger rock down into smaller pieces. Erosion is the movement of these small rocks from one place to another. Weathered rock can travel miles, carried by rivers and streams, often making its way to the open ocean. During their journey, the rocks are further broken apart and

smoothed. Over thousands of years, this process repeats and will continually dump small sand grains on the coast to form beaches.

In Florida, most of our sand is composed of quartz crystals that originated in the Northern U.S. in areas such as the Appalachian Mountains. However, not all beach sand comes from rocks on land. Colorful island sand comes from the erosion of volcanic rock. Some sand even comes from animals! Hawaii's famous white sand beaches are a result of the parrotfish that live on the reefs there. By grazing on the algae growing on coral, the fish ingest coral skeletons which is excreted from their bodies as fine white sand! Other sources of sand include the broken-down shells of mollusks and other tiny animals. So next time you visit the beach, be sure to take



Florida's Gulf Coast beaches are composed of sand grains made of quartz crystal.

a closer look at the sand beneath your feet. You might be surprised at what you find!

Sources: National Oceanic and Atmospheric Administration, Virginia Department of Education, Visit Florida, Woods Hole Oceanographic Institution



MEET THE

Atlantic Ghost Crab

Ocypode quadrata

SIZE: Carapace up to 2 inches

DIET: Feeds on decaying plant and animal material, but also preys on mole crabs and small mollusks.

DISTRIBUTION: Tropical areas of the Atlantic coasts of North and South America

The Atlantic ghost crab is a small land crab with a square carapace, long walking legs, and club-shaped eyestalks. It is tan or grey with excellent ability to camouflage in sandy habitats. It has two white claws which are used to help scoop and toss away sand while digging its burrow. Its burrow can descend between 0.6 to 1.2 meters underneath the sand, where the crab can be found hiding during the day and emerging at night when it is most active.

Sources: iNaturalist, University of Florida Institute of Food and Agricultural Sciences Extension, University of the West Indies - St. Augustine

A Dune in the Making

Dunes are more than just a pile of sand! Sand dunes are important ecosystems for the animals that call it home, as well as for you and me.

Sand continues to travel after established on a beach. As wind blows off the water, it picks up and carries sand grains over the ground surface. Plants slow down the wind and cause sand to pile up and create mounds. These mounds on beaches are called sand dunes. Dunes are a critical part of a beach ecosystem. Plants including railroad vine, beach morning glory, and sea oats grow in dunes across the Gulf Coast, which anchor the dune in place and support a variety of coastal wildlife.

Along with holding the dune

together, these plants also prevent too much sand from being washed back into the ocean. We call that coastal erosion. Additionally, dunes protect our coasts and homes from storms and floods. In Florida, coastal erosion and flooding are major concerns for developed areas. Solutions to these issues include nourishing beaches with new sand and planting more plants to hold dunes in place. Tampa Bay Watch



Dunes form on the beach and help protect inland areas from wave and tidal action.

hosts several restoration events that focus on native grass plantings to protect these important habitats.

Sources: Florida Museum, Florida Ocean, Florida State Parks, Onegeology.org, The University of Pennsylvania

Fun Facts

- It is estimated that sand on our East and Gulf Coast beaches is around 5,000 years old.
- Through their digestive process of grinding up coral skeletons, parrotfish can produce hundreds of pounds of white sand each year.
- After water, sand and gravel resources are the second-largest resource extracted and traded in the world.
- One of the most unique beaches, Shell Beach, can be found in Australia. The sand there is composed of trillions of tiny shells from an animal called the *Fragum cockle*.

Sources: U.S. Geological Survey Woods Hole Science Center, National Oceanic and Atmospheric Administration, United Nations Environment Programme, Shark Bay

Sustainability Tip



Watch where you walk!

When visiting the beach, make sure to keep off the dunes to preserve these important habitats. By walking or playing on sand dunes, we damage the beach grass and other plants that hold the dune together. Instead, walk on designated paths or walk-overs to access the beach.

Try something new!



Scan this code for a fun at-home activity!

Source: NASA Earth Observatory Kids

Kids' Pages is a quarterly newsletter supplement to the Bay Watch Log. Please get your kids involved and sign them up to be a member today! Email membership@tampabaywatch.org or visit tampabaywatch.org.