

## Mermaid's Purses

By Kenlynn Volz

Over the past few months, I've joined coastal biologist Taylor Bennett surveying Bryan Beach, Follet's Island, Matagorda Beach, Quintana Beach, and Surfside Beach for non-breeding shorebirds including American Oystercatchers, Black Skimmers, Piping Plovers, Red Knots, and Snowy Plovers. One of the many benefits of studying shorebirds is learning about the other organisms that call the Gulf of Mexico home.

A few weeks ago, while surveying Follet's Island, Taylor and I came across a mermaid's purse washed ashore in the rack! While this purse didn't contain any sand dollars, it once held a different type of valuable -- a skate pup!

Often called mermaid's purses, egg cases are produced by some members of the class Chondrichthyes, which includes cartilaginous fishes such as chimeras, sharks, skates, and rays. The term "mermaid's purse" likely came from the legends told by sailors who thought the pocket shape and tendrils would make a great mermaid accessory.

Chondrichthyans often have a slow life cycle; they have a late age of maturity, don't produce many offspring, and have long lifespans. Unlike most fish, which lay thousands of eggs at a time, Chondrichthyans tend to focus on laying a few eggs at a time or producing live offspring. The eggs produced by many Chondrichthyans are stored in egg cases. These reproductive strategies increase the odds that the offspring, known as pups, will survive to adulthood.

Coming in many shapes and sizes, each egg case protects the developing pup against predators. Collagen, the same material that makes up our connective tissues, makes up the leathery exterior of the egg case, adding durability to its structure. The horns or tendrils of some egg cases are used to anchor them to vegetation, the seafloor, or rocky crevices. This prevents the cases from drifting away from the hidden spot in which they are laid and into the jaws of a predator.

Once the pup has developed, it will emerge from the purse and swim away to begin its life at sea, leaving the empty egg case behind. These leftover egg cases will frequently wash ashore and can be found tangled in the vegetation within the rack. Skate egg cases, like the one we encountered in our recent survey, are the most common.

Four species of skate call the Gulf of Mexico home; the spreadfin skate, rosette skate, cleannose skate, and roundel skate. Skates are small rays within the family Rajidae. While they are similar in appearance to stingrays, skates lack a barb at the base of their tails, and instead have small barb-like spines along their backs. Despite these spines, skates are harmless to people. Skates feed on the seafloor, usually eating crustaceans and other marine invertebrates.

In the Gulf of Mexico, many Chondrichthyans are in decline. According to the ICUN RedList, 37% of sharks and rays are threatened with extinction worldwide. Threats to these fish include habitat loss, pollution, and overfishing. As predators, Chondrichthyans are vital to the health of marine ecosystems.

Photo: A skate egg sack found on Follet's Island Beach, taken by Kenlynn Volz on 16 March 2022.

