

**Angel Wing**  
*Cyrtopleura costata*



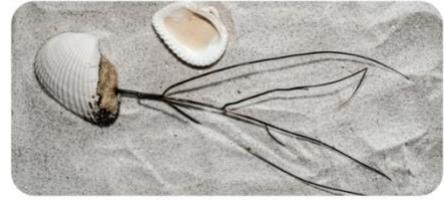
The Angel Wing is one of the most graceful shells found on our beaches. To compensate for its delicate shell, it has the ability to burrow up to three feet deep in mud or to more shallow depths in soft rock, clay or even wood. It digs these tunnels by using its foot to rock its tooth-like short side to burrow and dig. It also uses jets from the mantle cavity to flush particles from the excavation.

The bivalve then spends the rest of its eight-year life in its den. Long siphons protrude above the surface to circulate water and filter out food. It cannot retract the siphons fully, nor can its weak muscles completely close its shell.

The Angel Wing can grow up to seven inches long. The shells are normally white, however, some are pink-tinted due to exposure to red tide.

*Live shells should never be taken from any FL State Park.*

**Ponderous Ark**  
*Noetia ponderosa*



The Ponderous Ark is one of the few bivalves that are found undamaged, due to their heavy thick shell. They lack the straight hinge line of other arks and grow to 2 ½ inches. Shells often still have a dark brown or black velvet-like periostracum (organic shell layer). This covering is sometimes mistaken for a layer of oil or tar.

Ponderous Arks trickle spawn throughout the year with peaks in the summer and fall. They live in waters to 60 feet deep. Studies have been conducted in Florida to determine if aquaculture of this bivalve would be profitable. Results show that there is limited appeal by traditional clam customers.

The photo above shows a sea whip skeleton attached to the clam. These and other soft flexible corals are often found attached to the posterior of Ponderous Arks. Since Sea Whips feed on plankton suspended in the water, they may benefit from the water currents created by the filter-feeding Arks.

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**Cut-Ribbed Ark**  
*Anadara floridana*



The Cut-Ribbed Ark, as with some other Arks, has a conspicuous long straight hinge-line. It is distinguished from other similar shells by a deep narrow cut in the center of each radiating rib. This bivalve can grow to 4".

Embryos develop into free-swimming larvae and live among the plankton before maturing into a bivalve. Their habitat is in soft bottoms of mud and sand. They can be found from shallow water to a depth of 300 feet.

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**Calico Clam**  
*Marcocallista maculata*



This bivalve has a shiny shell with very fine growth lines. The surface is cream colored with blurry brown rectangles and smudges. Occasionally albino specimens are found. Calico Clams are part of the Venus family of which there are about 500 species. The Sunray, Cross-barred Venuses, Southern Quahogs and Dosinias are also found on Honeymoon Island.

The Calico Clam uses its strong foot to bury itself in the mud or sand around seagrass beds in waters from 6 to 60 feet. From this protected position it uses siphons to pull in food. The clam's embryos develop into free swimming planktonic larvae, then into a bivalve veliger, which looks like a miniature clam.

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**Channeled Duck clam** *Raeta plicatella*  
**Smooth Duck clam** *Anatina anatina*



Duck clams can be distinguished from similar sized and shaped clams by the distinctive spoon-shaped pit behind the central hinge teeth. The Channeled Duck Clam (top and left) is a little more common than the Smooth Duck Clam (bottom right). Both have thin shells, but the Channeled Duck Clam has broad concentric ribs and a more rounded shape.

These bivalves use a foot to dig into the sand in 10 to 18 feet of water. Living outside of the surf zone, live clams are not usually found on the beach. Both clam species have two long siphons that exit the flared hind end. These siphons extend up into the water above the sand where one filters out food and the other expels waste.

These clams have a ligament that holds the shells slightly open, while the adductor muscles are relaxed. Threatened, the adductor muscles contract, closing the shells and protecting the clam.

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**Prickly Cockle**  
*Trachycardium egmontianum*



The Prickly Cockle is distinguished by its rough spiny shell that grows up to 1 ¼ to 2 ¾ Inches.

These bivalves have a strong narrow foot with which they can “jump” by bending and then quickly straightening it. The foot is also used to bury itself just below the sea floor.

They feed on plankton by drawing in seawater through their short siphons. They exhibit gonochorism (the sex varies according to surrounding conditions).

Cockles’ predators are shore birds, fish, sea stars and humans.

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**Atlantic Giant Cockle**  
*Dinocardium robustum*



The Atlantic Giant Cockle, with its hard, sturdy shell can grow to be five inches long. It is also known as the Great Heart Cockle. If you put two halves together and look at them from the side, it looks like a heart.

A strong muscular foot allows them to burrow into sediment where they extend siphons into the water to filter for plankton and other organic material. They can also use this foot to leap away, in pole-vault fashion, from attacking predators.

Cockles are eaten in European countries and used in chowder in the United States. Cockles are found living in shallow water and to depths of 100 feet. This species is 65 million years old.

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**Van Hying's Cockle**  
*Robustum vanhyingi*



A subspecies of the Giant Atlantic Cockle, its shell is more elongate, slanted and more brightly colored. It grows up to 5 inches. This shell is named after Thompson Van Hying, who was the first director of the Florida Museum, from 1914 until 1941.

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**Yellow Cockle**  
*Trachycardium muricatum*



This shell is a cheerful yellow, sometimes with pale brownish markings. The inside of the shell can be a pale yellow as well. The nearly round-shaped shell measures up to 1¼ to 2½ inches.

These bivalves have a strong narrow foot that can be used to push off and “jump” by bending and then quickly straightening. The foot is also used to bury itself just below the sea floor.

They feed on plankton by drawing in seawater through their short siphons. They exhibit gonochorism (the sex varies according to surrounding conditions).

Cockles’ predators are shore birds, fish, sea stars and humans.

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**Disk Dosinia**  
*Dosinia concentrica*



The Disk Dosinia is a member of the Venus Family. It's very similar to the Elegant Dosinia but can be differentiated because the Disk Dosinia has finer concentric ridges that cannot be counted with the naked eye. (The Elegant Dosinia ridges are broad and easily seen and counted.)

These bivalves live buried in sand and sandy mud, preferring water shallower than 10 feet. They favor protected beaches and bays where they feed by pulling sea water in and out through siphons.

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**Coquina**  
*Donax variabilis*



The Coquina is a small wedge-shaped bivalve growing to a maximum of 1 inch. They are favored by shell collectors because they have a wide range of colors; white, yellow, pink, orange, red, purple, brown and blue. Some have colorful ray markings.

They live in colonies just below the sand’s surface where they migrate with the tide. They reposition themselves by frequently allowing wave action to wash them to a new location where they quickly rebury themselves. They have two short siphons and feed on suspended plant material and detritus.

Coquinas can be boiled and simmered to make a seafood broth.

Large deposits of Coquina shells are used for building materials. Compacted over time, they create a limestone that can be cut into blocks.

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**Common Jingle Shells**  
*Anomia ehippium*



These shiny 1" to 2" bivalves are named for the bell-like sound made when several shells are shaken together. Other names include: Mermaid's toenails, Neptune's toenails, toenail shells, gold shells and saddle oysters.

Beachcombers collect these shells to use for a variety of craft projects. They have industrial uses in the manufacture of glue, chalk, paint, shellac and solder.

Jingle shells are filter feeders, sieving water through their gills to remove plankton. They attach themselves by using their byssus gland to secrete byssal threads which secure them to a hard surface. The shell then takes the shape of the object it is attached to. Since the lower half of the bivalve is firmly anchored the upper half is the shell most often found on beaches after the animal dies.

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**Kitten's Paw**  
*Plicatula gibbosa*



This bivalve is obviously named for its thick shell with curving digit-like ribs resembling a kitten's paw. They are white to gray with red-brown to orange markings on the ribs. The shell can be ¼ to 1½ inches wide. This bivalve belongs to a small family of about 10 species which all live in tropical waters.

Their habitat is in water from the low-tide line to 300 feet deep. There they cement the highest part of their shell to a rock. The hard thick shell provides protection from crushing or boring by predators.

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**Pennsylvania Lucine**  
*Lucina pennsylvanica*



This bivalve is misnamed as its habitat is from North Carolina south and does not occur in the waters off of Pennsylvania. The 1" to 2" smooth white shell has a deep crease behind the umbo (pointed top). The live clam has a ridged periostracum (semi-soft outer covering) that may help secure it while buried. The periostracum easily flakes off and is often missing on shells found on the beach.

This Lucine is a filter feeder, and lives in sand and gravel at depths from 2 to 250 feet. It has been reported in extreme environments such as hydrothermal seafloor vents.

Their embryos change into free-swimming planktonic larvae before developing into juvenile clams. The genus name *Lucina* is one of the names of the Roman goddess Juno, "giver of light".

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**Buttercup Lucine**  
*Anodontia alba*



The Buttercup Lucine shell is dull white with an interior that is white to butter yellow. The shell may grow to 2 inches.

The bivalve lives in soft mud or sand in areas of low nutrients, low oxygen and high sulfides in waters 3 to 300 feet deep. Its very long foot that may be 6 times as long as the shell! It uses the foot to construct a mucus-lined tube in the sand. Through this tube it draws in water and food. After filtering out the nutrients, the wastes and water are then expelled through a long siphon. The siphon is unusual in that it retracts by turning itself inside out.

The Buttercup Lucine also hosts symbiotic sulfur-oxidizing bacteria in their gills which provides additional sustenance.

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**Eastern Oyster**  
*Crassostrea virginica*



This large irregularly-shaped thick-shelled bivalve lives cemented to other oysters in large colonies. They live on hard or soft bottom up to 40 feet deep. The smooth inner surface has a purple muscle scar.

Eastern Oysters feed on planktonic organisms and detritus filtering and purifying up to fifty gallons of water a day. They start life as male, change sex several times, and end life as female. These oysters can live up to 30 years and reach a maximum size of 11 inches. Predators include crabs, seabirds, sea stars, and Cownose Rays.

People love to eat oysters. Thirty miles of the Florida Panhandle has historically produced 90% of the State's oysters. Storms, salinity changes, habitat loss and overfishing have decimated populations. The decline is so critical that the Florida Fish and Wildlife Conservation Commission has suspended the harvest of all wild oysters in Apalachicola Bay until December of 2025.

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## Flat Tree Oyster

*Isognomon alatus*



The flat tree oyster's color is pale brownish to purplish black with a shiny cream interior. It has a long hinge line. It is a very thin bivalve and can be easily confused with a jingle shell. Although many of these shells are small, they can grow to 3 inches.

Its habitat is in areas of high sedimentation. It is often found in dense patches on Red Mangrove roots where they attach themselves with byssal shock-absorbing threads, secreted by the byssus gland in the foot. The Flat Tree Oyster feeds by passing seawater through its gills, filtering out plankton and other organic particles.

In the spring, changes in water temperature, salinity, and food supply, trigger mass spawning by the oysters. Together they release their egg and sperm cells into the water where the eggs are fertilized and the larvae float with plankton for a couple of weeks.

Flat Tree Oysters have been used to determine if heavy metal pollution has occurred. Since their bodies readily absorb impurities, analyzing them can determine the amount of toxins in the water.

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## Stiff Pen Shell

*Atrina rigid*



This bivalve has a dark brown shell, with 15 to 20 radiating ribs and short tubular spines. Their posterior muscle scar is outside the shiny inner shell.

These large bivalves grow to 12 inches. They can be found in and around seagrass beds, buried and anchored to hard objects by their byssal threads which protrude from the beak of the shell. With the upper half of their shell exposed, it they filter plankton from the seawater.

Small crabs often live within the shell's mantle cavity, and snails take up residence on the exterior of the shell. The Pen Shell is preyed upon by sea stars and the horse conch. It has a large adductor muscle which is edible.

The interior of these shells can be very iridescent and a broken piece of shell often catches the eye of beachcombers.

## Half-naked Pen Shell

*Atrina seminuda*



Similar to the Stiff Pen shell, but having much longer tubular spines on the upper half of its shell. Also, the posterior muscle scar is within the pearly interior area.

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## Sawtooth Pen Shell

*Atrina serrata*

This Pen Shell has 30 radiating ribs with hundreds of short spines.

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### Scallop *Pectinidae*



Compared to oysters and clams, scallop shells are thin and lightweight to aid in swimming. Scallops are filter feeders and their particular shell color depends on the type of plankton they eat.

Scallops are one of the cleanest shellfish available. The edible adductor muscle is not used to filter water, so scallops are not susceptible to toxins or contaminants the way that clams and mussels are. Scallops are low in calories, sodium and saturated fats, and are more than 80% protein.

Unlike mussels and clams, scallops are the only bivalve mollusk that is free-swimming. They swim by quickly opening and closing their shells. They also have up to 200 amazing blue eyes around their mantle.

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### Florida Spiny Jewelbox *Arcinella cornuta*



This bivalve is small, growing to about 1". Its off-white shell is thick. It has distinct erect tubular spines in 7 to 9 rows across the shell. The interior is shiny and tinted pink to purple. The spikes and the hard shell help protect the Spiny Jewelbox from predators. Specimens found on the beach may have had their spines somewhat eroded.

The Spiny Jewelbox is a filter feeder that extracts plankton from the seawater. The animal starts life cemented to a hard structure. While still young, they detach themselves, then move freely and mature on the sandy sea floor.

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### Southern Quahogs *Mercenaria campechiensis*



These large sturdy bivalves can grow to 6 inches. The inside of the shell has two muscle scars. These clams move through the mud with their hefty muscular foot. They are exceptional filter feeders and can sieve a gallon of water per hour. During this process they can absorb pollutants, bacteria and viruses from contaminated water. This does not harm the clams, but can pose a health risk to humans who consume them.

Southern Quahogs, along with their related Northern Quahogs, are extensively harvested. The entire body is edible, not just the large adductor muscle. At seafood markets the smallest (youngest) Quahogs are called Countnecks. As they get larger, Littlenecks, then Topnecks, Cherrystones and finally Quahogs.

Historically, Native Americans made "wampum" from the Quahog's thick shell. They would drill, then punch out 1/4" elongated tubular beads. The name "quahog" comes from the native's name "poquauhock" meaning horse fish.

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### Turkey Wing *Arca Zebra*



The Turkey Wing is one of the easiest shells to identify, with its color and shape resembling the wing of a Wild Turkey. Also notable is the long straight hinge line that connects it to a matching shell half. Its shell is thick and can grow up to 4 inches in length. This bivalve can be found from the low-tide mark down to 20 feet deep where it attaches itself to rocks or other hard surfaces with shock-absorbing byssal threads.

Living animal shells are covered with a thick coating or periostracum. They are important and efficient filter feeders that filter large amounts of plankton from the water.

Thousands of tons of these clams are harvested in the Caribbean each year. In Bermuda, "Turkey Wing Pie" is a favorite.

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## Cross-barred Venus Clams

*Chione elevata*



These bivalves are seldom larger than 1½ inches and are the most numerous shells found on our beaches. As its name implies, it has raised, bladelike concentric ridges superimposed on strong radial ribs giving a lattice appearance. The hinge of the shell has two teeth and the shell edge is finely ridged.

The clam's preferred habitat is in the sand around seagrass beds. Using a siphon system, seawater is passed over a mucus collection net which extracts plankton for food. There are approximately 23 species of the genus *Chione* in Florida, however the distinctive raised cross-bar pattern identifies the *elevata* species.

Predators of the Cross-Barred Venuses are numerous carnivorous gastropods. For us, a tasty chowder can be made, although that requires a lot of clams.

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## Sunray Venus

*Macrocallista nimbosa*



The Sunray Venus clam lives close to shore in water up to a depth of 25 feet. This beautiful bivalve has bands of darker colors which radiate from the beak (umbo) to the margin (periphery). The shell, which may reach a length of 6 inches, fades quickly from sun exposure. It has a large foot which it uses to bury itself in sand or mud. There it extends siphons to take in water and filter out food.

In Florida there is ongoing research focusing on aquafarming Sunray Venus Clams. Sunrays grow faster than hard clams, reaching an optimal 2-inch harvest size in about a year. Other clams take up to six months longer to harvest. They also have more than twice as much meat because the shells are not as thick or heavy as other clams. Lastly they are sweet and briny making them a favorite seafood choice.

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