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The Mississippi Aquarium



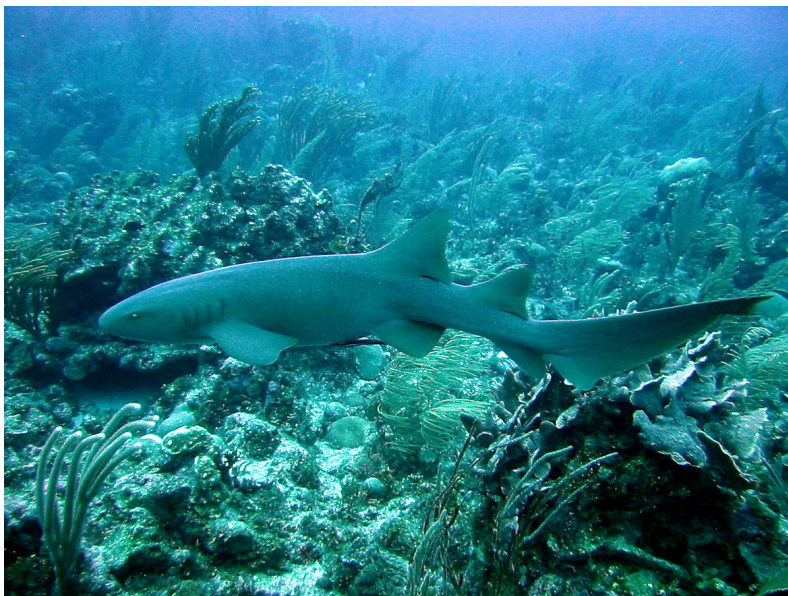
The Mississippi Aquarium in Gulfport, Mississippi is set to open on **April 30, 2020**. The Mississippi State University Marine Fisheries Ecology Program is excited to partner with the Mississippi Aquarium to advance their mission of Education, Conservation and Community. Facilities like the Mississippi Aquarium are an excellent way to get up close and personal with the extraordinary diversity of marine life found along the Gulf Coast. To celebrate the opening of the Mississippi Aquarium, we've dedicated this issue of the Gulf Coast Fisherman to a closer look at some of the most interesting local species you may see on opening day. We'll highlight three groups of fishes: **Sharks** (fish made entirely of cartilage), **rays** (close cousins to the sharks, except flat) and **bony fishes** (fishes with...bones!). We hope you enjoy this preview of coming attractions, and we'll see you at the aquarium this spring!

Sandbar Shark



Sandbar Shark (*Carcharhinus plumbeus*): Sandbar sharks are common large coastal sharks in the Gulf of Mexico, reaching up to 7 feet in length. A raised ridge of skin, known as an *interdorsal ridge*, runs between their two dorsal fins, which classifies them as a ridgeback shark. Sandbar sharks are often confused for bull sharks, given their color and general body shape. However, several differences exist between sandbar and bull sharks: bull sharks are bulkier, they lack an interdorsal ridge, and they have small eyes compared to the larger eyes of sandbar sharks. Sandbar sharks also have large, broadly shaped dorsal and pectoral fins. These ridgeback sharks prefer to spend most of their time in coastal waters deeper than 65 feet, feeding on small fish and other sharks found on the bottom of the seafloor. Sandbar sharks can be found in offshore water of Mississippi and Alabama, but they are designated as protected species, meaning they cannot be commercially or recreationally harvested.

Nurse Shark



Nurse Shark (*Ginglymostoma cirratum*): If you have ever been to an aquarium before, odds are you've seen a nurse shark. They are easily

identified by their large dorsal and tail fins, sand colored skin, and unique mouths, which are decorated with nasal barbels (i.e. fleshy projections) and lack the characteristic sharp, pointy teeth found in many shark species. Adults can grow up to *9 feet* and are often found in deeper waters off our coasts (particularly Alabama), while younger individuals prefer the clear, shallow waters of coastal Florida, especially areas around scallop beds and coral reefs. Nurse sharks have strong jaws and use a suction method to engulf their prey items, which include invertebrate (i.e. sea urchins, lobsters, squid) and fish species. These tadpole-looking sharks also have extremely tough skin, which used to make them a target for the shark leather industry. Today, nurse sharks are valuable species for display in aquaria across the United States and also for ecotourism businesses.

Bonnethead



Bonnethead (*Sphyrna tiburo*): The bonnethead is also commonly referred to as the shovelhead or scoophead, given its signature-shaped head. It is the smallest of the three hammerhead species found in the Gulf of Mexico, growing to an average size of just 4 feet in length. The jaws of these sharks are specially modified to help them eat their favorite food: blue crabs! Their front teeth are pointy to help them “floss” through the seagrass where blue crabs regularly reside, while their back teeth are molar-like, allowing the sharks to crunch down on the hard outer body of crabs. A recent study showed that the bonnethead shark can actually digest and incorporate some of the nutrients found in the seagrass, which technically makes this species of shark *omnivorous*! Along the Gulf Coast, bonnetheads prefer shallow, coastal waters, particularly seagrass beds where they can find their next meal!

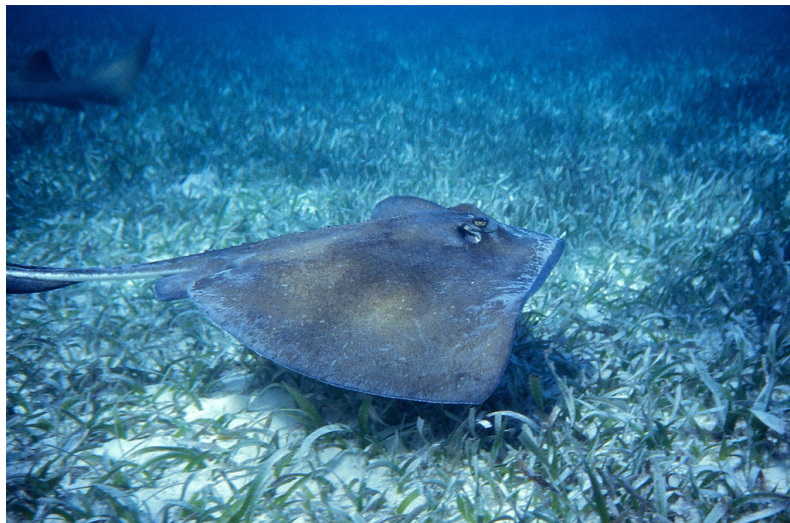
Did you know that the Mississippi/Alabama border is a unique “line in the sand” for Gulf of Mexico sharks? Many shark species (e.g. nurse sharks) are primarily found east of the Mississippi/Alabama line, whereas other species prefer the waters west of the state border.

Atlantic Stingray



Atlantic Stingray (*Hypanus sabinus*): The Atlantic stingray is typically what people envision when they think of stingrays. Relatively small-bodied, these stingrays only grow to be about 2 feet across. They can be identified by their pointed noses and the reddish coloring around their pectoral fins. These stingrays prefer to spend most of their time on the bottom of the seafloor. Their body shape, which includes a mouth on the underside of the body, enables them to feed on various invertebrates like worms, small crustaceans, and clams. Atlantic stingrays reproduce quickly – only four months of gestation - and can give birth to two to three pups at a time. They are a common ray that are found in the shallow coastal waters along the Gulf Coast. Typically, this species prefers warmer waters and has been known to migrate offshore during the colder winter months.

Southern Stingray



Southern Stingray (*Hypanus americanus*): Southern stingrays grow much larger than their smaller cousin, the Atlantic stingray. This larger species can max out at 6.5 feet across! However, only female southern stingrays can grow that large. Males usually only grow to about 2.5 feet across. This difference in size between sexes is termed "sexual dimorphism", and is common in rays for reproductive reasons. Females often give birth to two to seven pups at a time, after a gestation period of 5-8 months. Both sexes of these stingrays can be found on the bottom of the seafloor, creating depressions in the seafloor to

expose and feed on a myriad of different prey items from fish to crustaceans. Southern stingrays are often found along sandy bottoms and are common in bays and estuaries. Along the Gulf Coast, they are commonly encountered in Mobile Bay, AL and within the shallow waters of the Mississippi Sound, but also venture offshore into deeper waters.

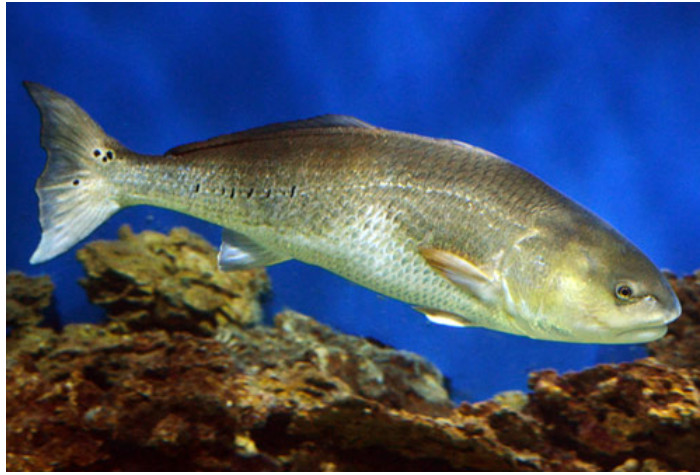
Cownose Ray



Cownose Ray (*Rhinoptera bonasus*): Cownose rays are found in many touch tanks, given their propensity to swim near the surface, unlike other stingray species that prefer to lay on the seafloor. In the wild, cownose rays are typically found in large schools, sometimes comprising as many as 10,000 individuals, swimming near the surface. Their preferred diet consists primarily of shellfish and crustaceans. When they detect prey items, they flap their “wings” (i.e. their modified pectoral fins) while simultaneously sucking and filtering sand through their mouth. Eventually this reveals their prey, which they effortlessly consume using their strong jaws and heavily modified teeth - known as crushing plates - to break down the tough shells. Female cownose rays only give birth to one pup every year, which make them extremely susceptible to overfishing because of their slow reproduction rate. Cownose rays are common residents across the entire Gulf Coast.

Did you know that all stingrays actually give live birth? The closely related skates lay eggs, which are encased in a small pouch often called a mermaid’s purse – you may have even seen them while wandering the beach. Additionally, the barb, or stinger, of a stingray is similar to a fingernail; once removed, it can regenerate. When kept in aquaria, these barbs are routinely trimmed for safe handling by guests and caretakers.

Red Drum



Red Drum (*Sciaenops ocellatus*): Red drum (a.k.a. redfish) are euryhaline, meaning they inhabit areas where freshwater and saltwater meet. They can be found in estuaries, coastal waters, and even offshore during peak breeding season off our coast, usually feeding on other small fish species and invertebrates such as crabs, shrimp and sand dollars. You can identify red drum by the beautiful copper and bronze coloring along its body and the distinctive dark spot near the base of the tail. Red drum have been found to reach over *4 feet* in length and live more than *50 years*. Both male and female red drum move to salty water to spawn, usually between the months of August and October. Females have been estimated to produce *20-40 million* eggs per spawning season! Red drum are common along the entire Gulf Coast and are often highly sought after by recreational fishermen for sport and consumption.

Atlantic Tripletail



Atlantic Tripletail (*Lobotes surinamensis*): Tripletail are also known as

blackfish and are easily identified by their namesake: three modified fins that give the appearance of three tails. When these fish are born, they are often (but not always) bright yellow in color, but this eventually fades into a mottled pattern of darker colors. Tripletail often display a unique behavior when hunting their preferred prey of small fish and invertebrates. They float on one side, just below the surface, and expose just enough of themselves so as to mimic a leaf or floating debris. The shadow created by this behavior likely attracts prey which they lunge at to consume. Tripletail can reach more than 3 feet in length and weigh over 40 pounds. They abound in MS and AL nearshore waters during the summer, but disappear during the colder months. Unfortunately, the details of this migration remain unknown.

Atlantic Tarpon



Atlantic Tarpon (*Megalops atlanticus*): The silver king himself, the tarpon is one of the Gulf's most charismatic residents. These large fish can reach over 8 feet in length and well over 200 pounds! They are, however, extremely slow growing: it takes 10 years for them to reach sexual maturity, but they can live to be over 60 years old. The oldest tarpon in captivity lived to be 63 years of age before it leaped out of its tank at the Shedd Aquarium in 1998! Luckily, females are extremely fertile, producing over 20 million eggs per year. In the wild, tarpon are found in warm, shallow, coastal waters, feeding on other fish and crustaceans. Tarpon are highly migratory, spending winters in south Florida and Mexico before traveling hundreds of miles across the northern Gulf in the spring. Like tripletail, the movements and habitat use of adult tarpon off the AL and MS coast are relatively unknown. However, in recent years, catch-and-release tarpon anglers have played an instrumental role in advancing our understanding of this species, particularly along the Gulf coast.

Did you know these three species (red drum, tripletail, and tarpon) represent extremes along a spectrum of fish growth? While tripletail only live to be 5 years old, both red drum and tarpon are known to live longer than 50 years!



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