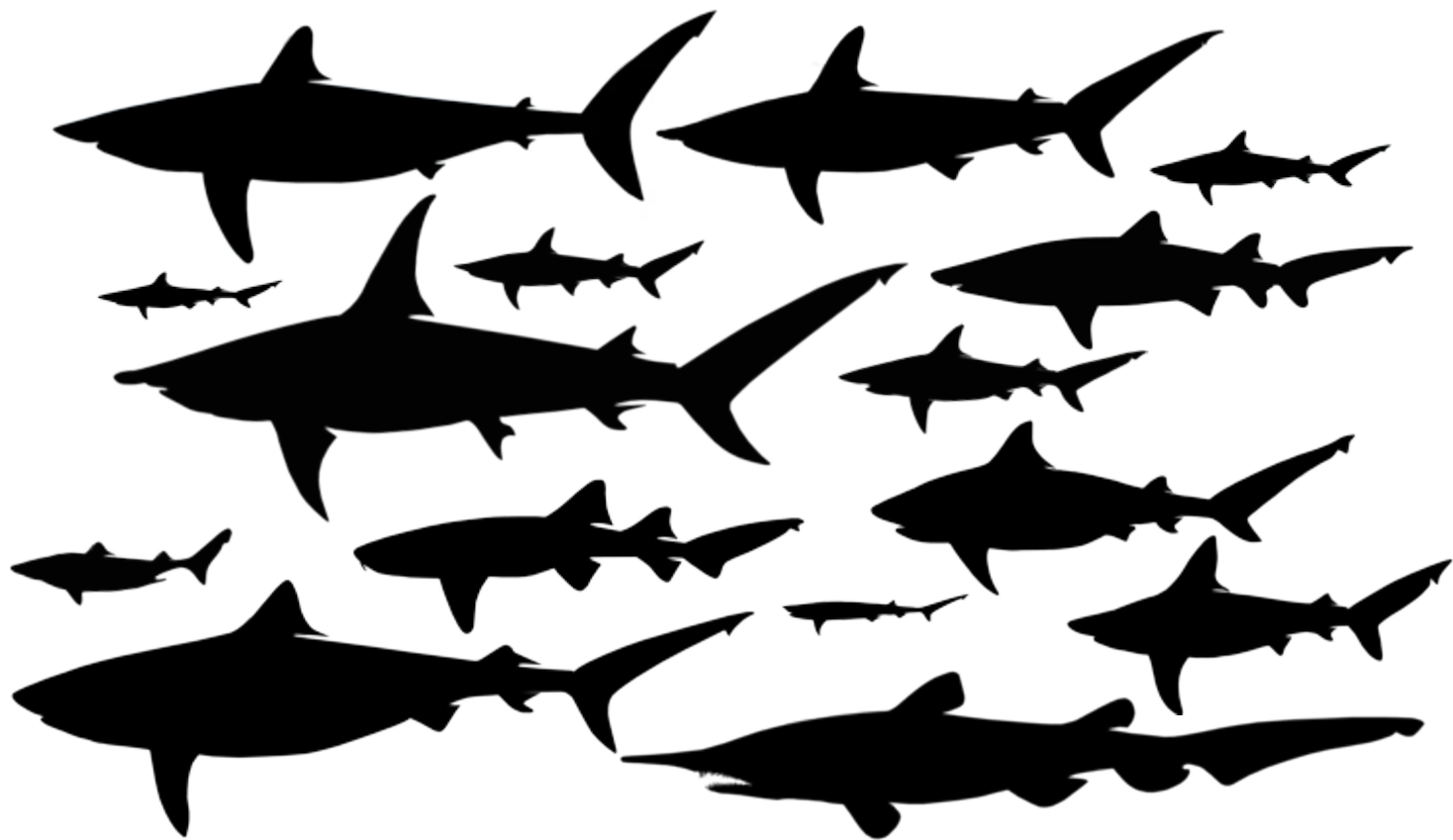


Mississippi's Sharks and Rays

An educational guide for Mississippi Aquarium

Photo provided by Mississippi Aquarium



Mississippi's Sharks and Rays

An educational guide for Mississippi Aquarium

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MASGP-21-016

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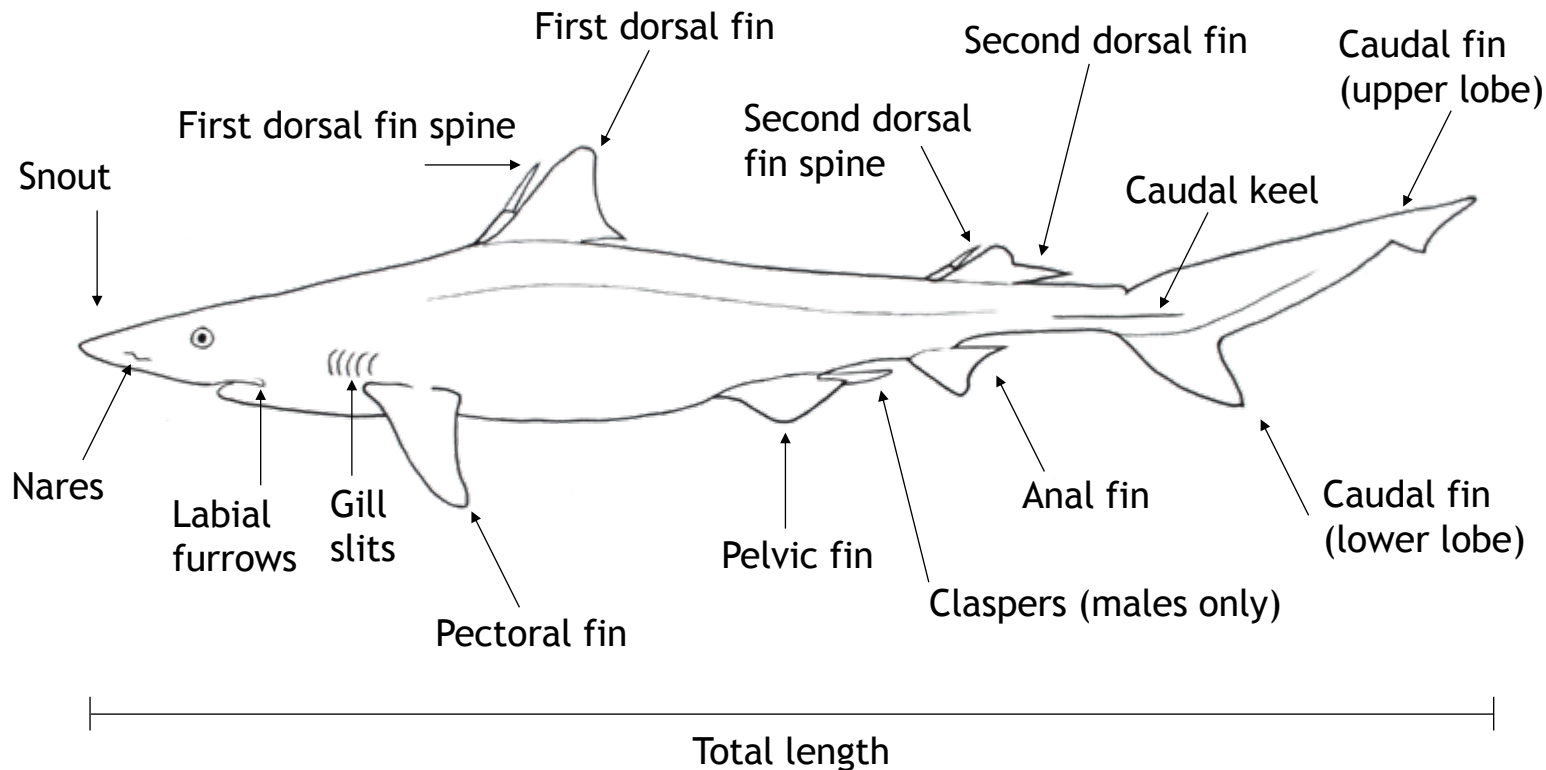
Using This Guide

The waters surrounding Mississippi are home to an exciting diversity of sharks, skates, and rays (collectively called *elasmobranchs*). We've developed this book to showcase a small portion of this diversity and highlight the sharks and rays you may see at Mississippi Aquarium. Below are a few things to keep in mind as you go through this book. First, we've included the common and Latin (or scientific) name for each species. Then, alongside each color illustration, we've shown an example of a single tooth from the upper jaw (sharks) or an entire set of jaws (rays). We've also described the average size at maturity (i.e., size at adulthood) and the maximum reported total length (for sharks) or disc width ("wingspan," for rays) for Gulf of Mexico specimens. To best illustrate the maximum reported total length of each shark and the maximum reported disc width of each ray, we've displayed a silhouette of each species relative to a 6-foot-tall human. Finally, we've presented a color-coded "population status" graphic to indicate whether the current status of each population is good (green), fair (yellow), poor (red), or unknown (gray). To develop this graphic, we used data from NOAA Fisheries for populations in the U.S. Gulf of Mexico, instead of the IUCN, which provides global population trends. While current as of 2021, it's important to remember that the statuses of U.S. shark and ray populations are constantly changing (hopefully for the better!).

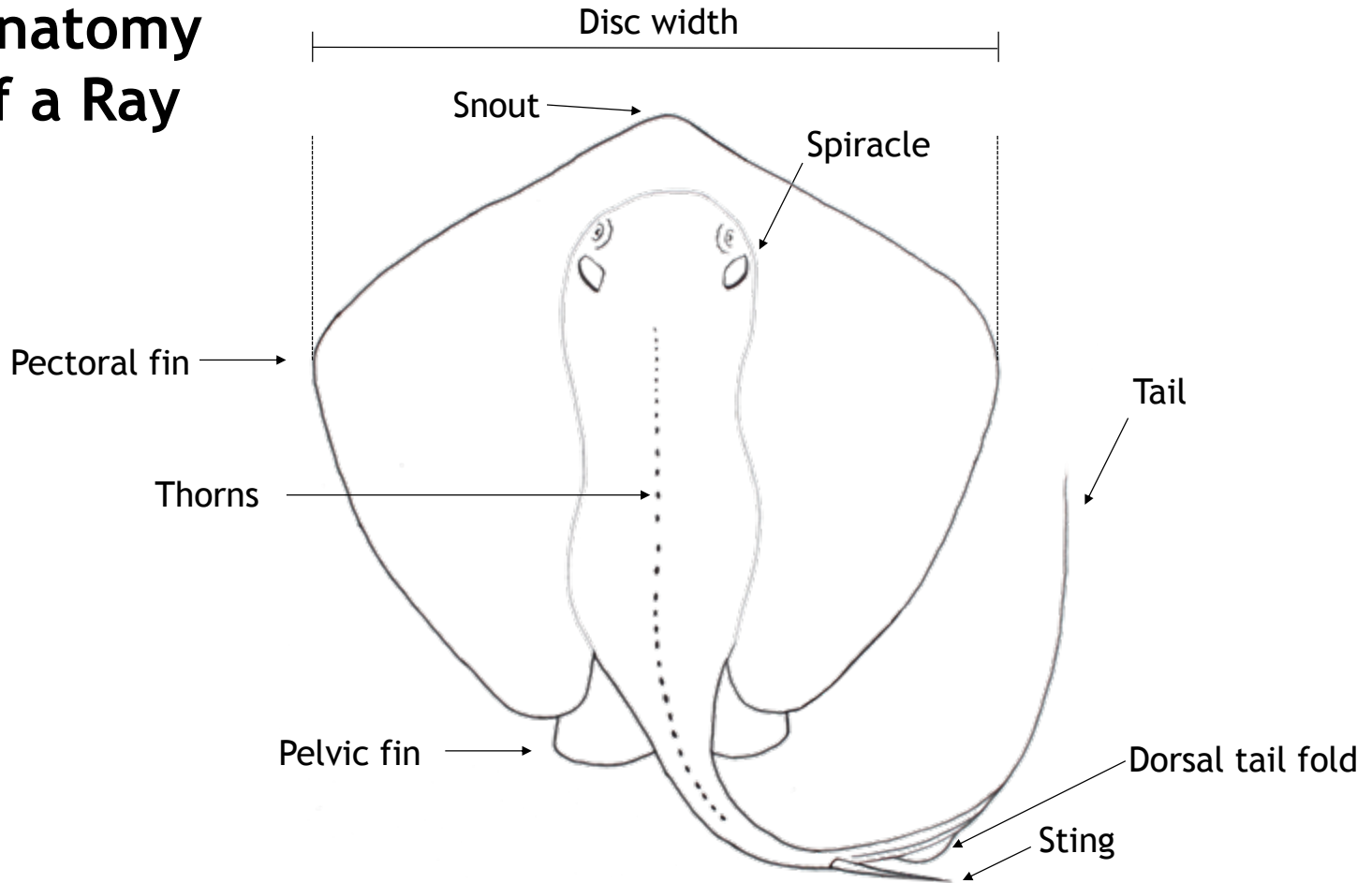
We hope this book increases your appreciation for the incredible diversity of sharks and rays off our coast. Enjoy!



Anatomy of a Shark



Anatomy of a Ray

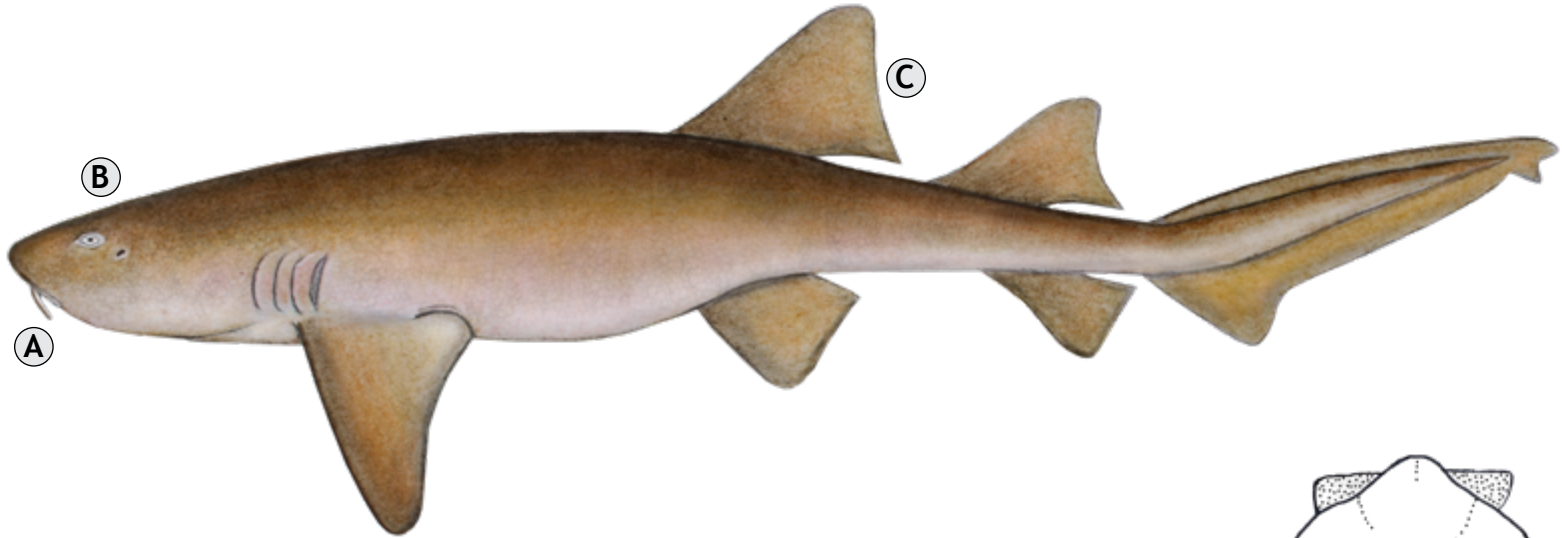


Nurse shark

Ginglymostoma cirratum

Mississippi
Aquarium
Sharks

6



- A. Nasal barbels (slender, whisker-like sensory organs)
- B. Wide head, giving it a tadpole-like appearance
- C. First dorsal fin farther back on body

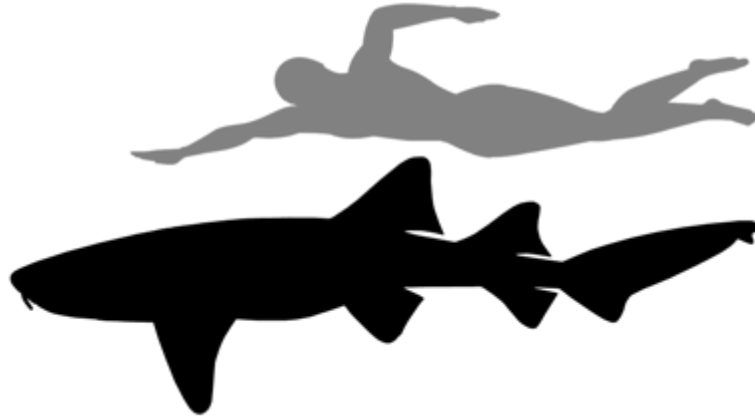


Good

Fair

Poor

Unknown



Size: 6 ft 7 in (at maturity), 9 ft (max)

Habitat & Diet: Shallow coastal waters; feeds on fishes and invertebrates

Interesting Fact: Coloration ranges from yellowish tan to dark brown

Nurse shark

Ginglymostoma cirratum

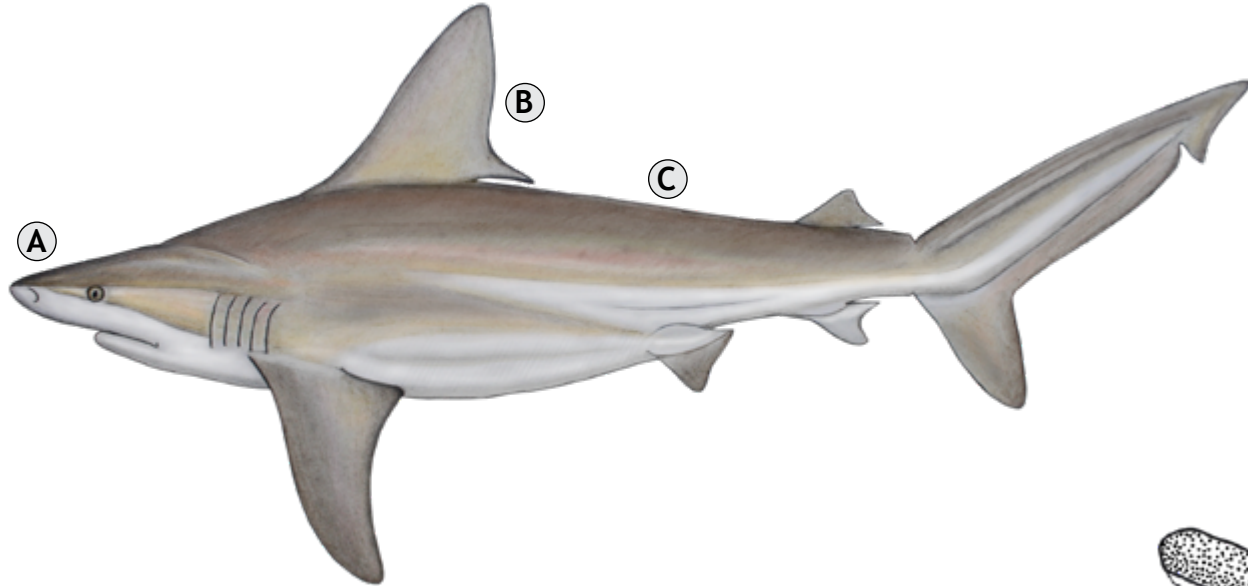
Mississippi
Aquarium
Sharks

Sandbar shark

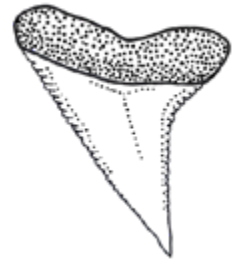
Carcharhinus plumbeus

Mississippi
Aquarium
Sharks

8



- A. Snout shorter than mouth width
- B. Large first dorsal fin
- C. Interdorsal ridge

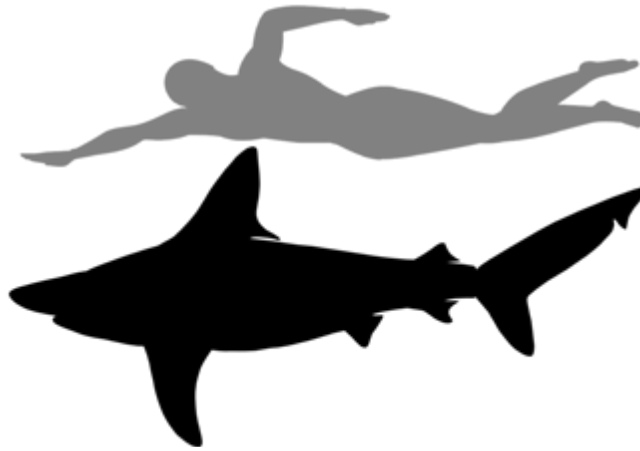


Good

Fair

Poor

Unknown



Size: 6 ft (at maturity), 7 ft 8 in (max)

Habitat & Diet: Coastal waters; feeds on small fishes

Interesting Fact: Undertakes long seasonal migrations

Sandbar shark

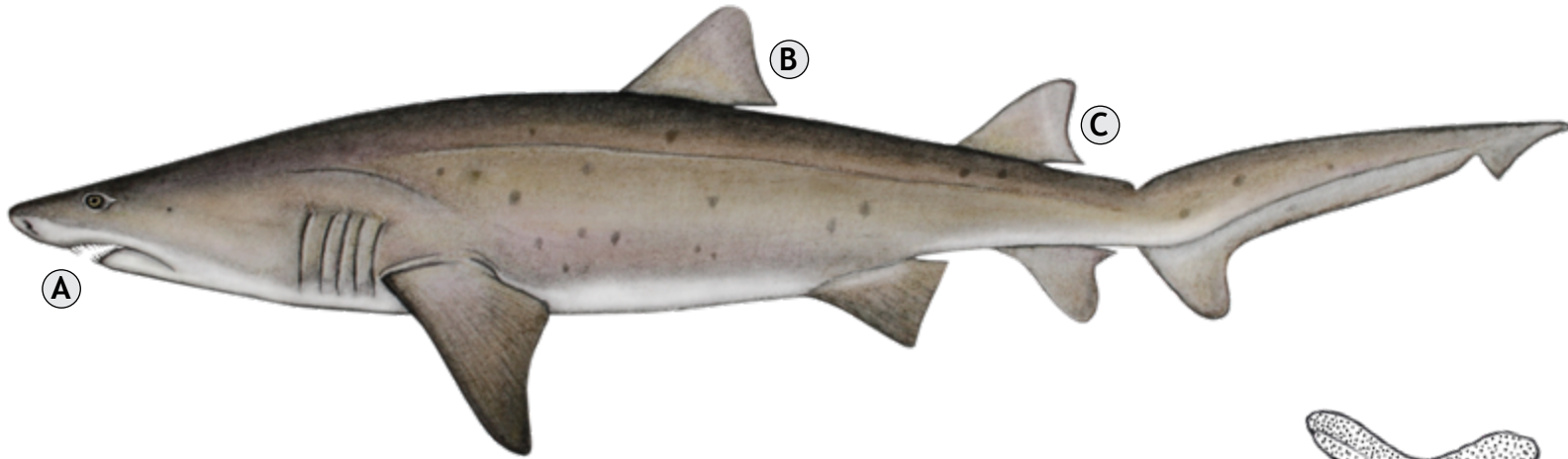
Carcharhinus plumbeus

Mississippi
Aquarium
Sharks

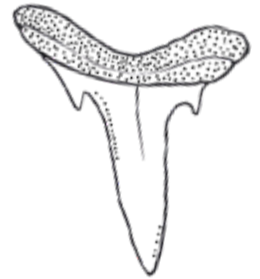
Sand tiger shark

Carcharias taurus

Mississippi
Aquarium
Sharks 10



- A. Sharp, jagged teeth
- B. First dorsal fin located far back on body
- C. Secondary dorsal fin nearly as large as first dorsal fin

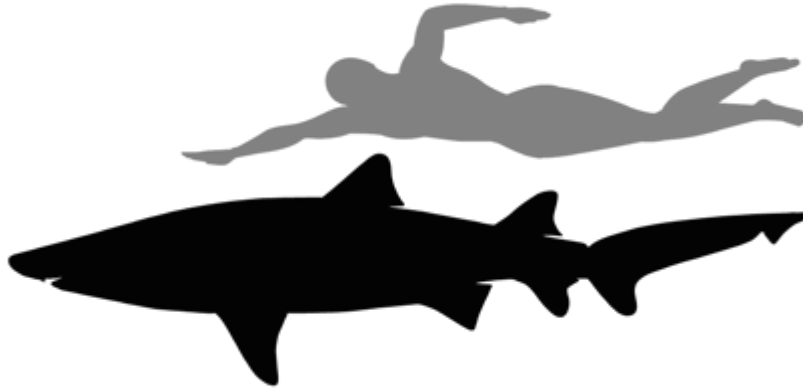


Good

Fair

Poor

Unknown



Size: 6 ft 7 in (at maturity), 9 ft 10 in (max)

Habitat & Diet: Shallow water, often found near bottom; feeds on fishes

Interesting Fact: Siblings eat each other in the womb (termed *adelphophagy*)

Sand tiger shark

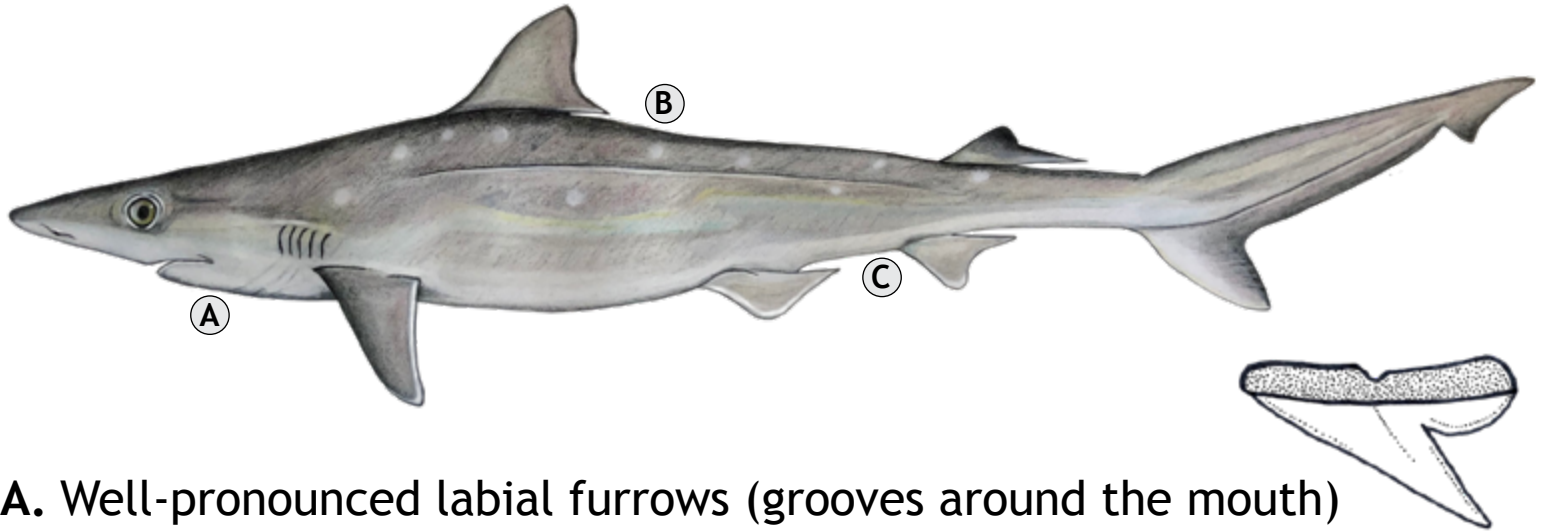
Carcharias taurus

Mississippi
Aquarium
Sharks

Atlantic sharpnose shark

Rhizoprionodon terraenovae

Common
Mississippi
Sharks 12



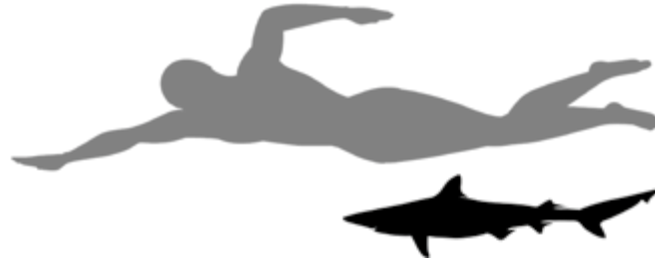
- A. Well-pronounced labial furrows (grooves around the mouth)
- B. White spots (adults only)
- C. Pre-anal ridges

Good

Fair

Poor

Unknown



Size: 2 ft 6 in (at maturity), 3 ft 7 in (max)

Habitat & Diet: Inshore and offshore; feeds on small fishes and invertebrates

Interesting Fact: Most common coastal shark in the northern Gulf of Mexico

Atlantic sharpnose shark

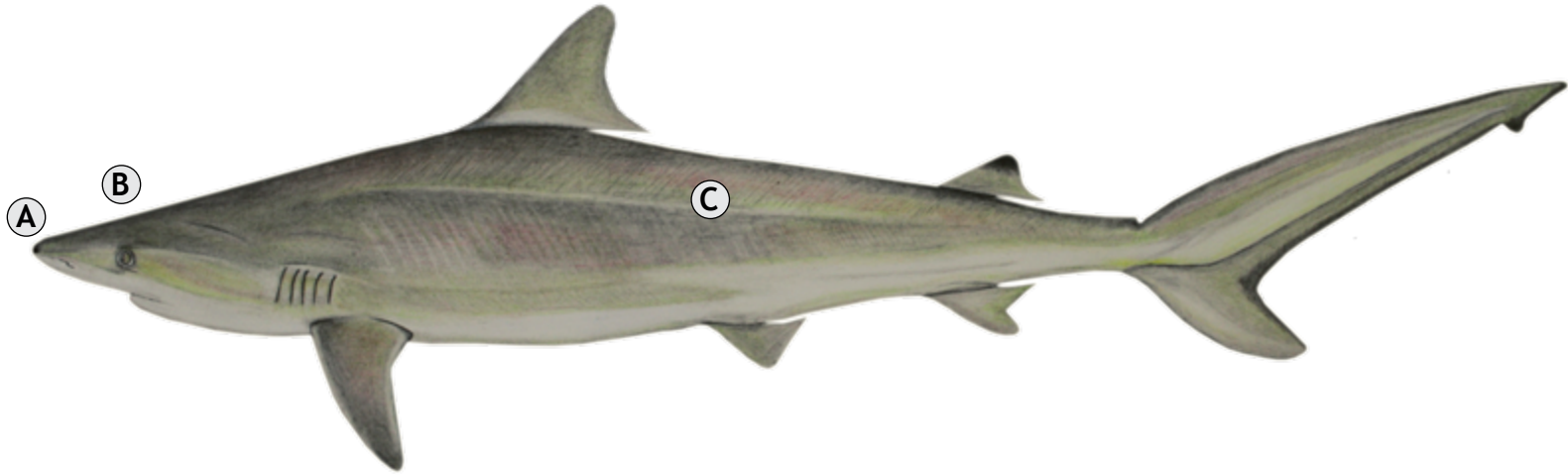
Rhizoprionodon terraenovae

Common
Mississippi
Sharks

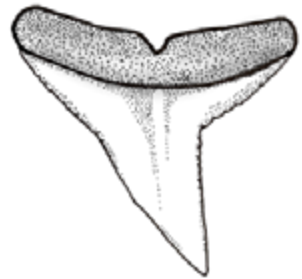
Blacknose shark

Carcharhinus acronotus

Common
Mississippi
Sharks 14



- A. Black-tipped nose
- B. Large eyes
- C. Copper color along body

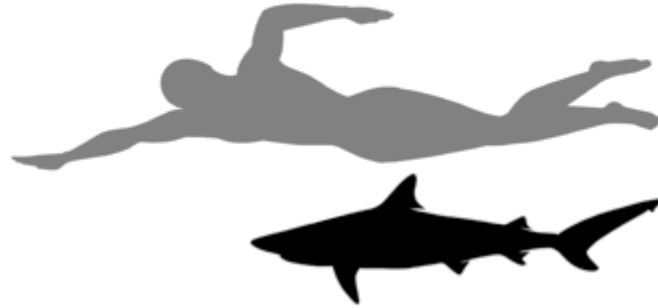


Good

Fair

Poor

Unknown



Size: 3 ft 5 in (at maturity), 5 ft (max)

Habitat & Diet: Shallow, warm coastal waters; feeds on small fishes

Interesting Fact: Sometimes mistaken for a lemon shark because of its color

Blacknose shark

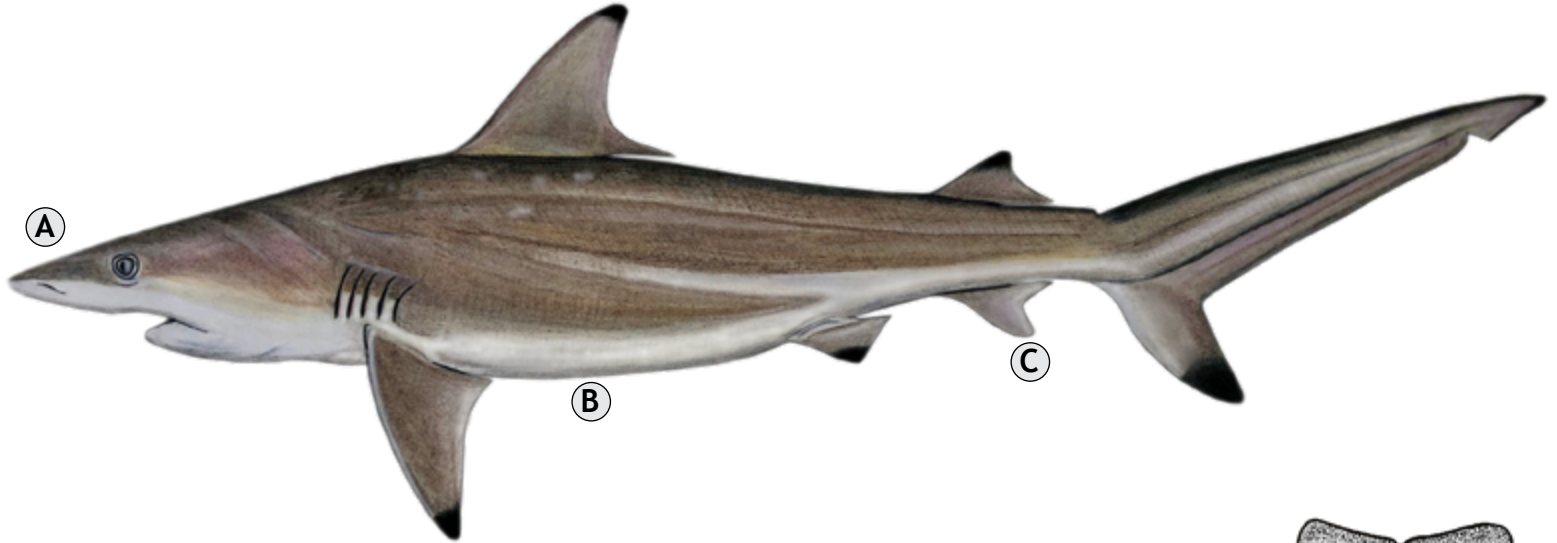
Carcharhinus acronotus

Common
Mississippi
Sharks

Blacktip shark

Carcharhinus limbatus

Common
Mississippi
Sharks 16



- A. Nose shorter than mouth width
- B. Stout body
- C. Black tips on all fins except anal fin

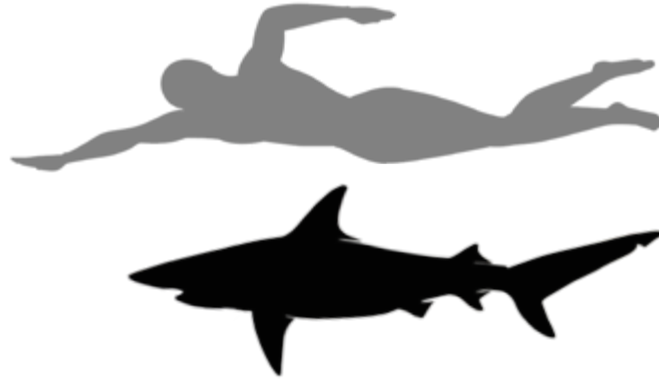


Good

Fair

Poor

Unknown



Size: 4 ft 8 in (at maturity), 6 ft 3 in (max)

Habitat & Diet: Nearshore, subtropical coastal waters; feeds on fishes

Interesting Fact: Often seen with a species-specific parasite on dorsal region

Blacktip shark

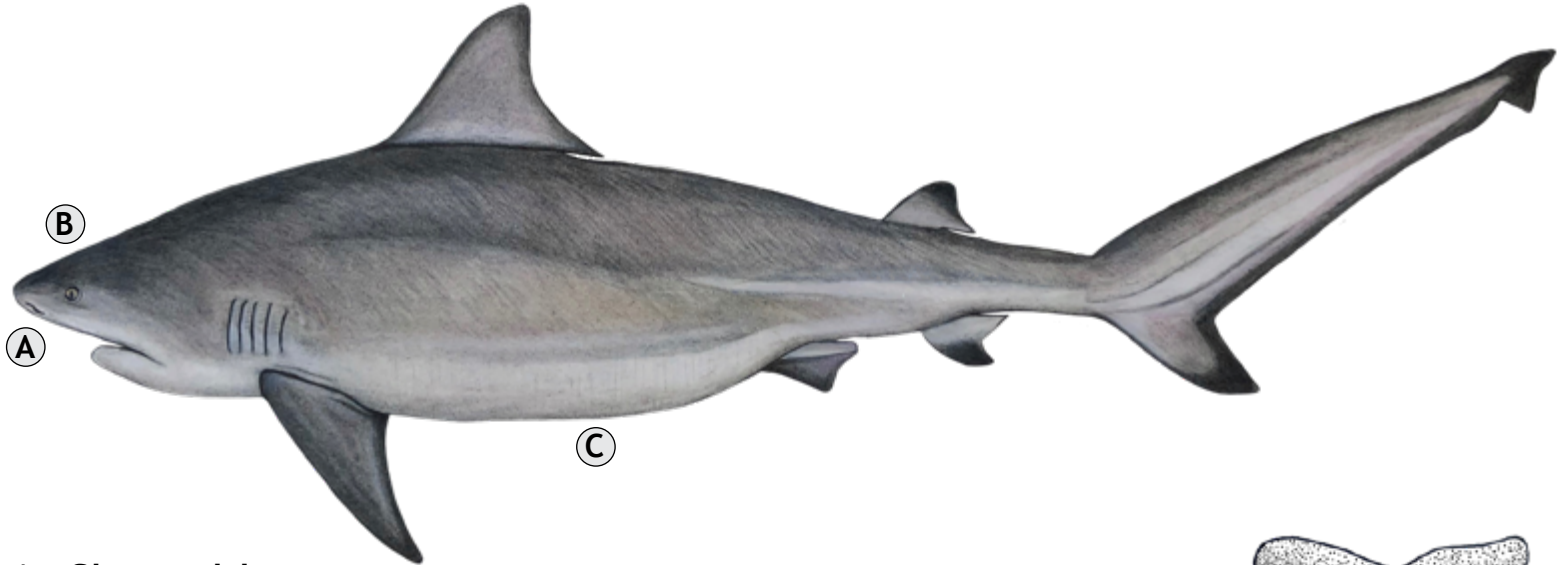
Carcharhinus limbatus

Common
Mississippi
Sharks

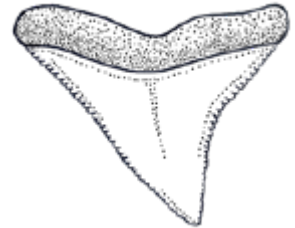
Bull shark

Carcharhinus leucas

Mississippi 18
Apex
Predators



- A. Short, blunt snout
- B. Small eyes
- C. Stocky body

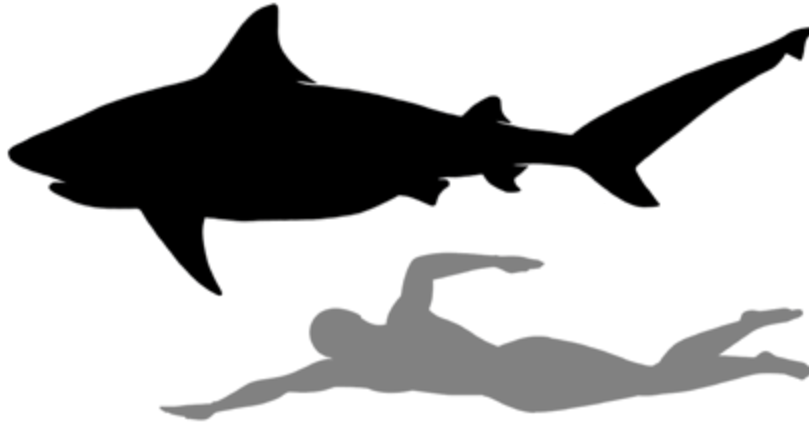


Good

Fair

Poor

Unknown



Size: 7 ft 5 in (at maturity), 9 ft 4 in (max)

Habitat & Diet: Coastal waters, including freshwater; feeds on fishes, stingrays, and sharks

Interesting Fact: Juveniles prefer estuaries and rivers; adults inhabit saltwater

Bull shark

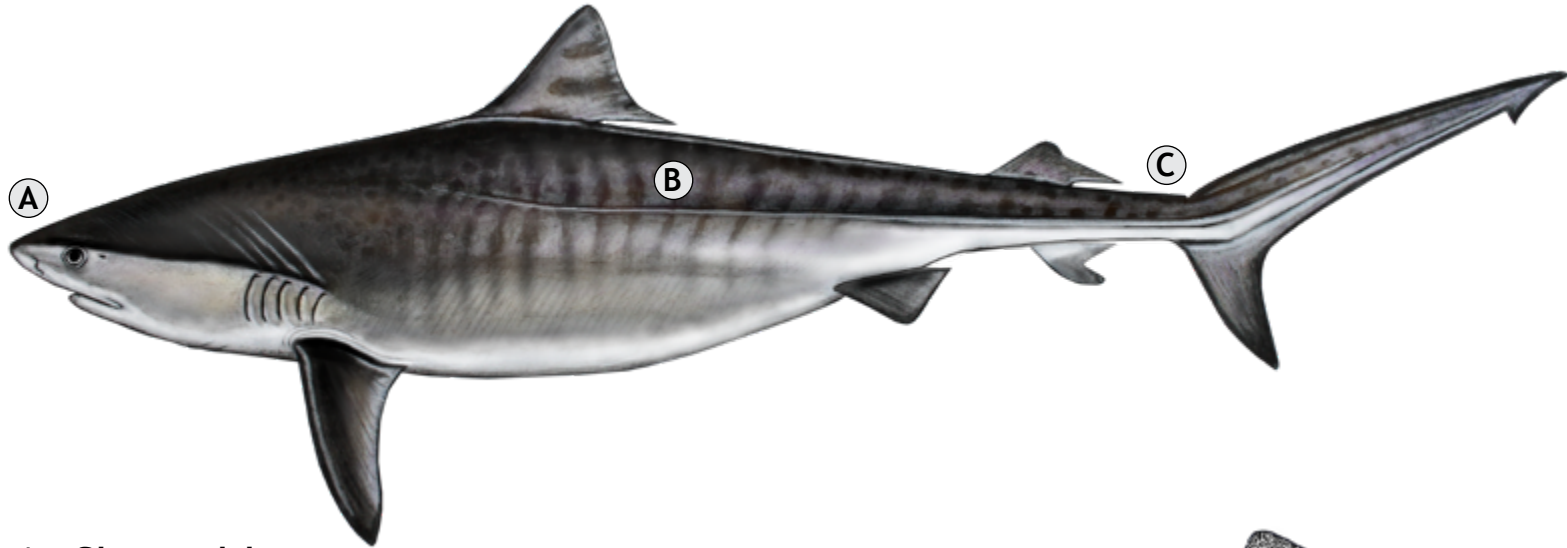
Carcharhinus leucas

Mississippi
Apex
Predators

Tiger shark

Galeocerdo cuvier

Mississippi 20
Apex
Predators



- A. Short, blunt snout
- B. Dorsal surface covered with dark spots/bands
- C. Well developed caudal keel

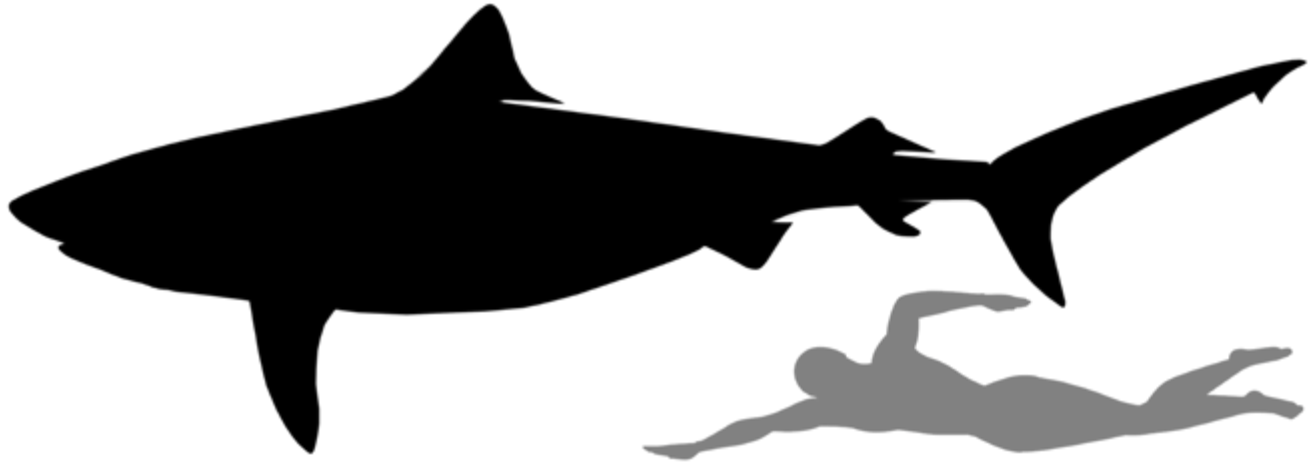


Good

Fair

Poor

Unknown



Size: 9 ft 10 in (at maturity), 15 ft (max)

Habitat & Diet: Subtropical and tropical waters; feeds on sea turtles, mammals, fishes, and sharks

Interesting Fact: Teeth distinctly curved and serrated for tearing through prey

Tiger shark

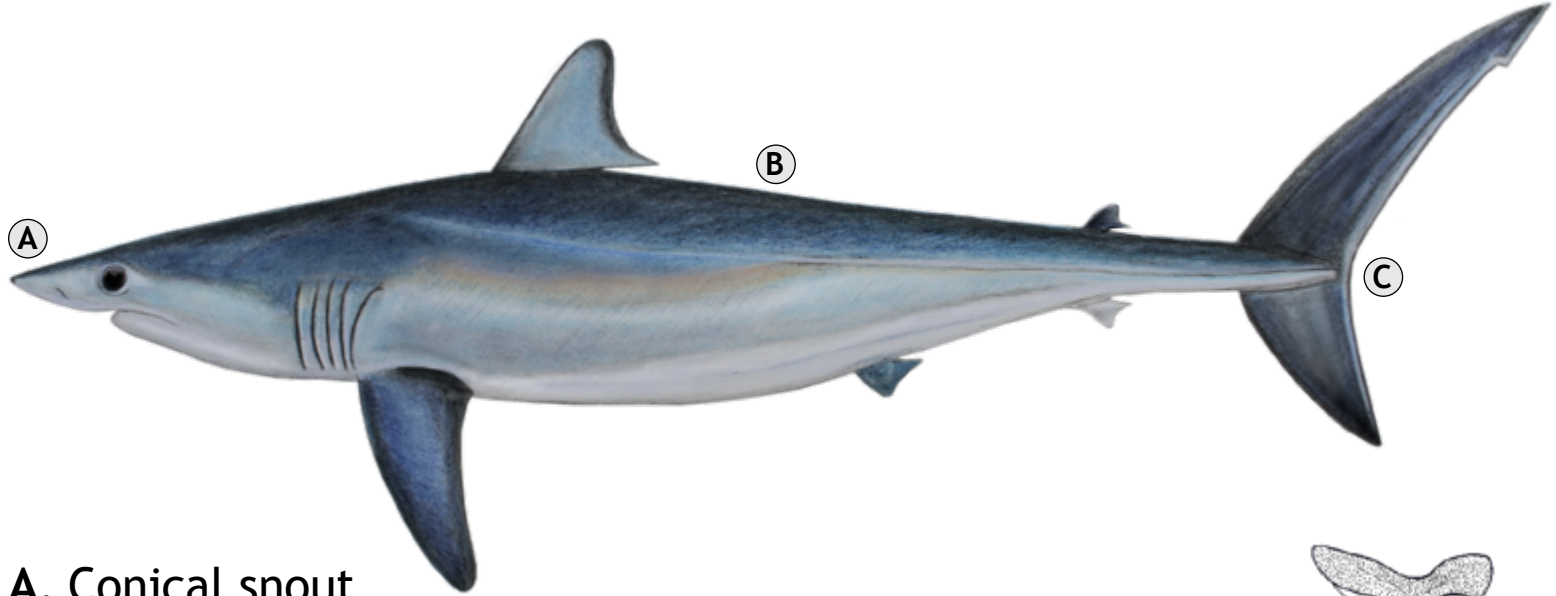
Galeocerdo cuvier

Mississippi
Apex
Predators

Shortfin mako

Isurus oxyrinchus

Mississippi 22
Apex
Predators



- A. Conical snout
- B. Blue color along body
- C. Lunate tail

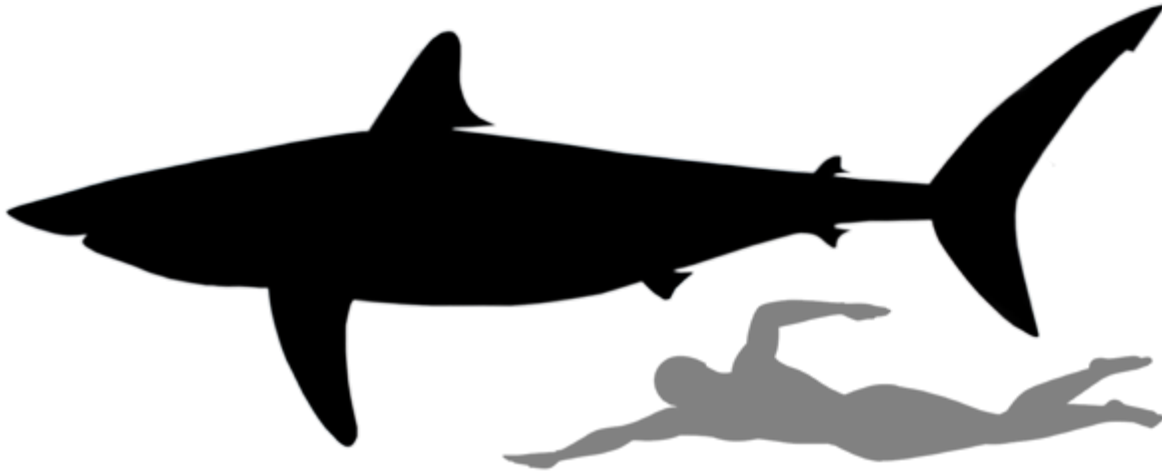


Good

Fair

Poor

Unknown



Size: 6 ft 6 in (at maturity), 13 ft (max)

Habitat & Diet: Subtropical and tropical waters; feeds on fishes and squids

Interesting Fact: Considered the fastest shark in the ocean (nearly 40 mph)

Shortfin mako

Isurus oxyrinchus

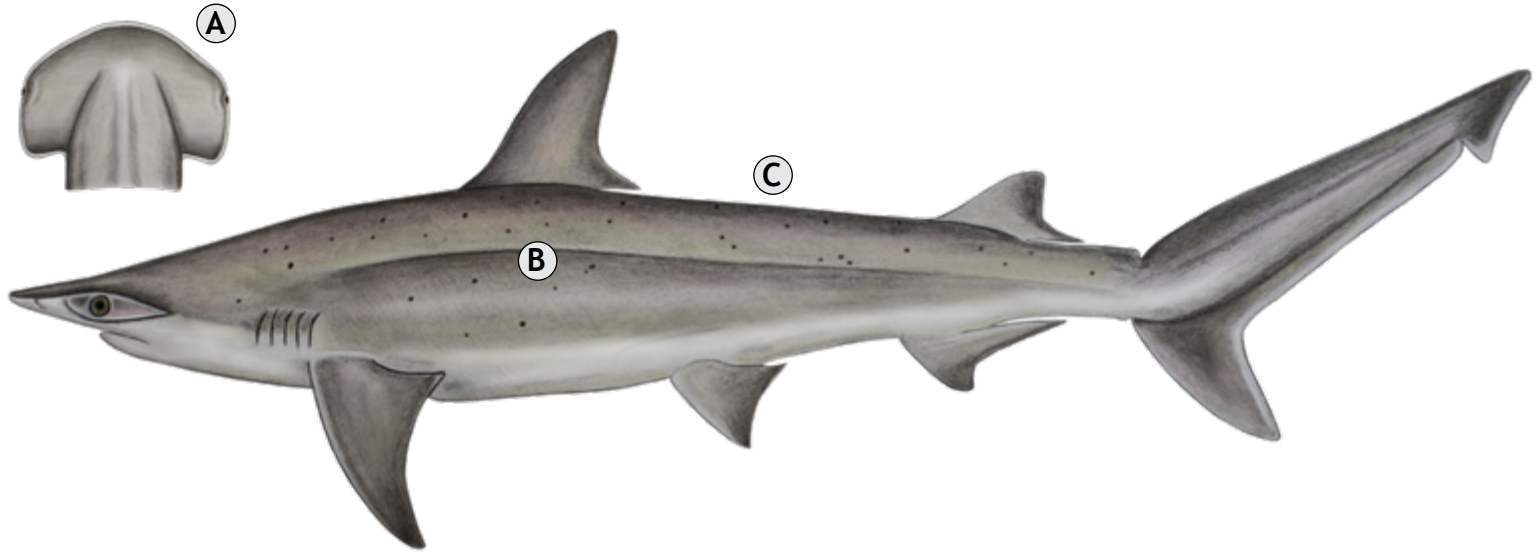
Mississippi
Apex
Predators

Bonnethead

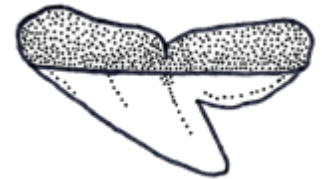
Sphyrna tiburo

Mississippi
Hammerheads

24



- A. Flattened, shovel-shaped head
- B. Speckles on body
- C. Brownish or greenish-gray color

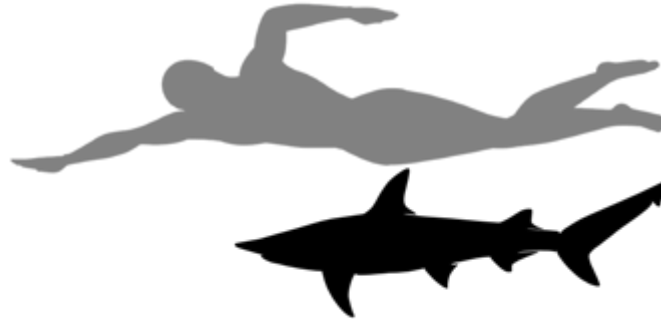


Good

Fair

Poor

Unknown



Size: 2 ft 4 in (at maturity), 5 ft (max)

Habitat & Diet: Shallow inshore waters; feeds mostly on small invertebrates

Interesting Fact: Teeth are specially modified molars for consuming crabs

Bonnethead

Sphyrna tiburo

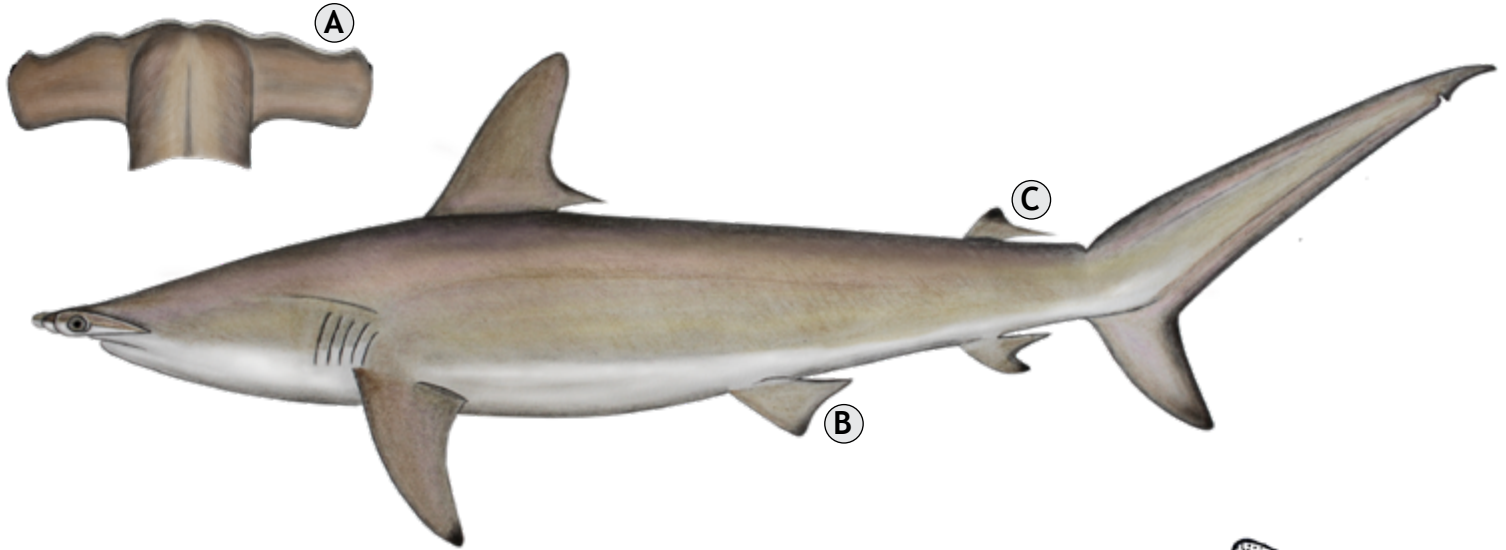
Mississippi
Hammerheads

Scalloped hammerhead

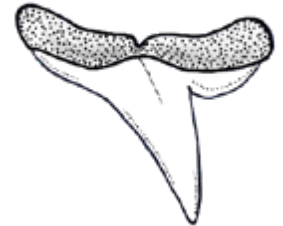
Sphyrna lewini

Mississippi
Hammerheads

26



- A. Notches near eyes on head (cephalofoil)
- B. Pelvic fins with straight rear margins
- C. Long and low secondary dorsal fin

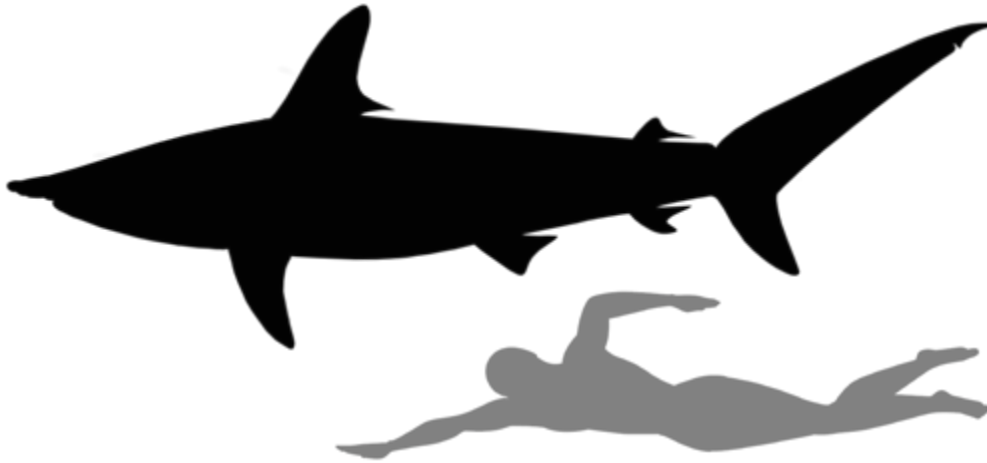


Good

Fair

Poor

Unknown



Size: 6 ft 7 in (at maturity), 11 ft 6 in (max)

Habitat & Diet: Coastal and oceanic waters; feeds on stingrays, fishes, and small sharks

Interesting Fact: Sometimes swim on their sides

Scalloped hammerhead

Sphyrna lewini

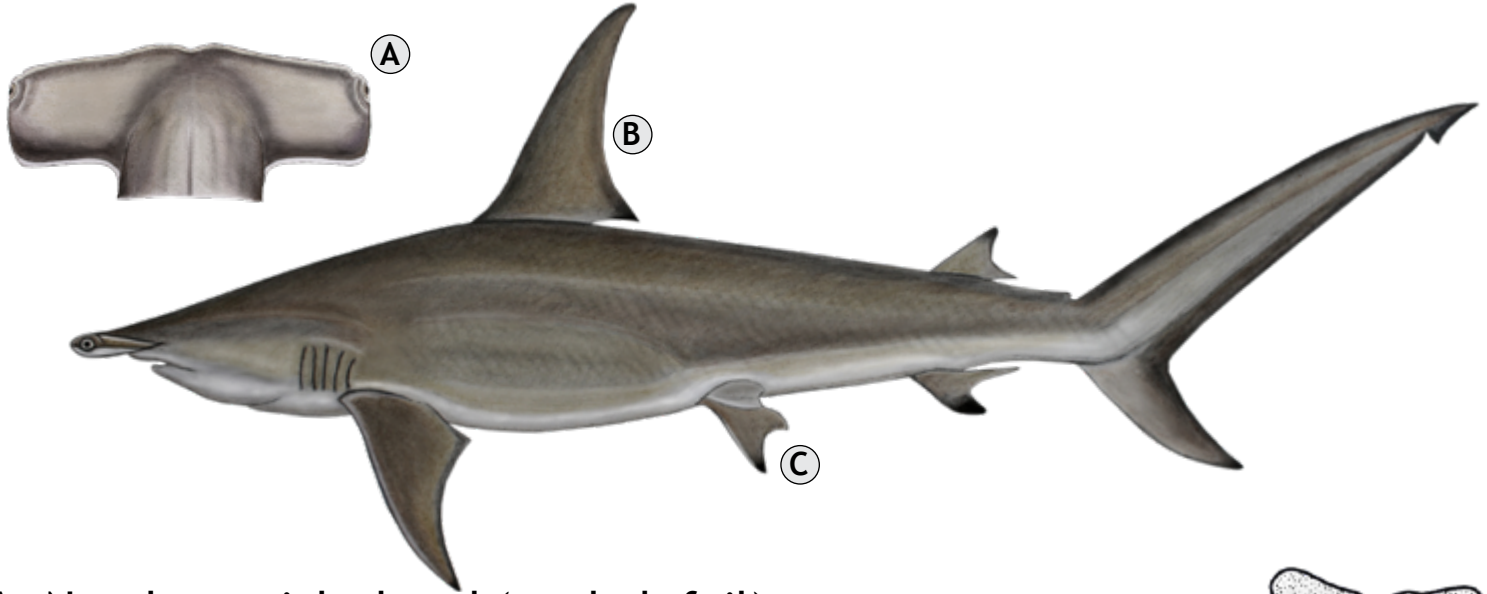
Mississippi
Hammerheads

Great hammerhead

Sphyrna mokarran

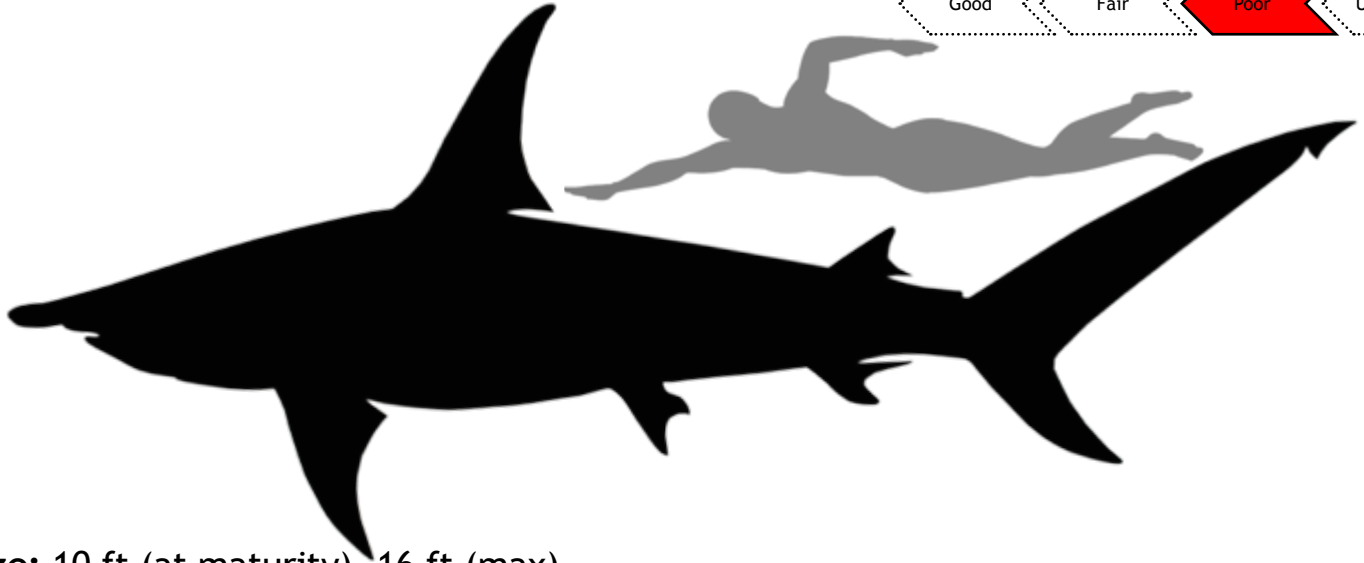
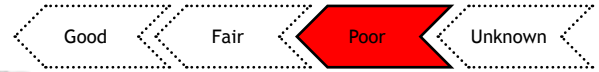
Mississippi
Hammerheads

28



- A. Nearly straight head (cephalofoil)
- B. Extremely high, curved (i.e., falcate) first dorsal fin
- C. Pelvic fins with curved rear margins





Size: 10 ft (at maturity), 16 ft (max)

Habitat & Diet: Shallow coastal waters; feeds on stingrays, smaller sharks, and fishes

Interesting Fact: The largest hammerhead species in the world

Great hammerhead

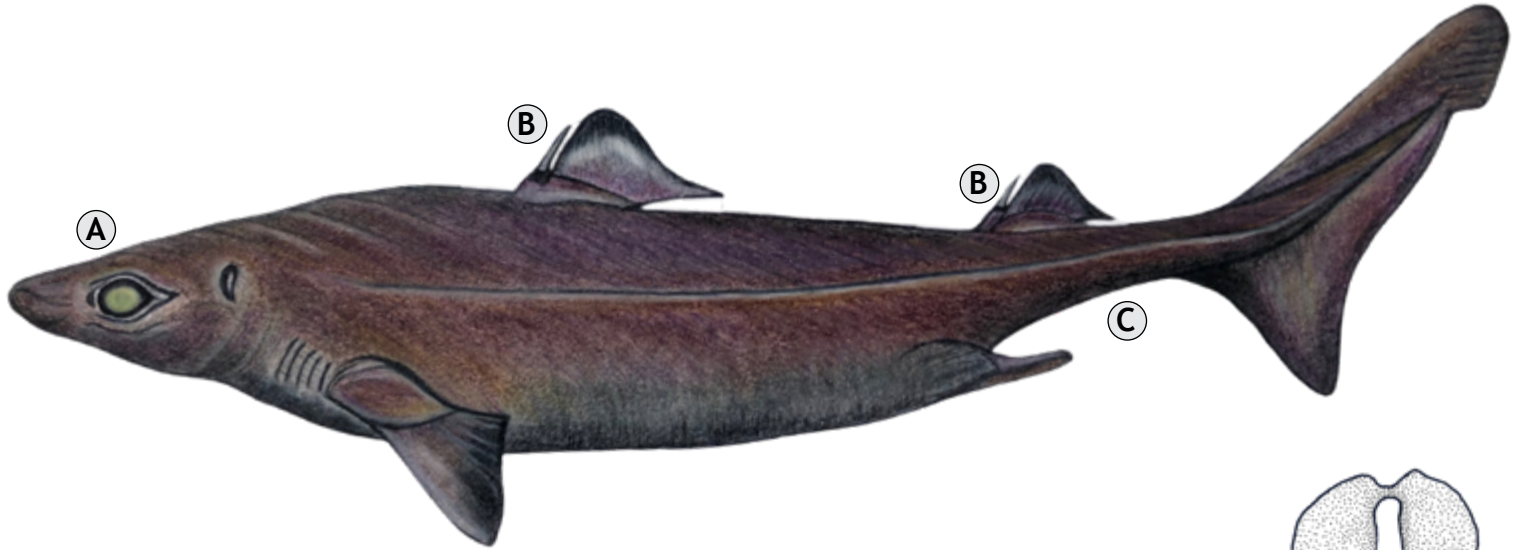
Sphyrna mokarran

Mississippi
Hammerheads

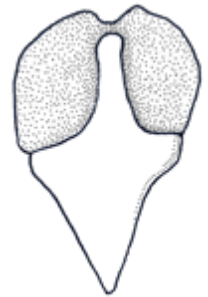
Gulper shark

Centrophorus granulosus

Mississippi 30
Deepwater
Sharks



- A. Green eyes
- B. Spines on each dorsal fin
- C. No anal fin

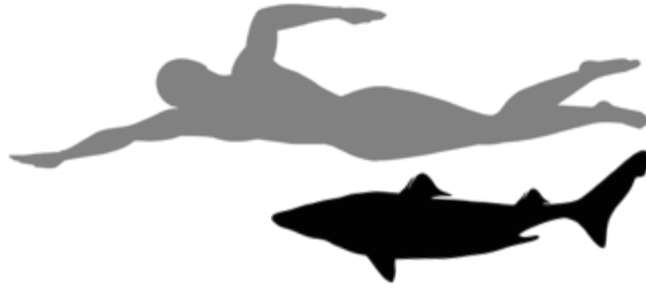


Good

Fair

Poor

Unknown



Size: 3 ft 2 in (at maturity), 4 ft 6 in (max)

Habitat & Diet: Deep waters; feeds on small fishes and squids

Interesting Fact: Large, broad, leaf-like scales (known as dermal denticles)

Gulper shark

Centrophorus granulosus

Mississippi
Deepwater
Sharks

Sharptnose sevengill shark

Hepttranchias perlo

Mississippi
Deepwater
Sharks 32



- A. Narrow, tapering snout
- B. Seven gill slits
- C. Only one dorsal fin, located far back on body



Good

Fair

Poor

Unknown



Size: 2 ft 10 in (at maturity), 3 ft 8 in (max)

Habitat & Diet: Deep, subtropical and warm waters; feeds on squids and small fishes

Interesting Fact: Most shark species have five gill slits, but this species has seven

Sharpnose sevengill shark

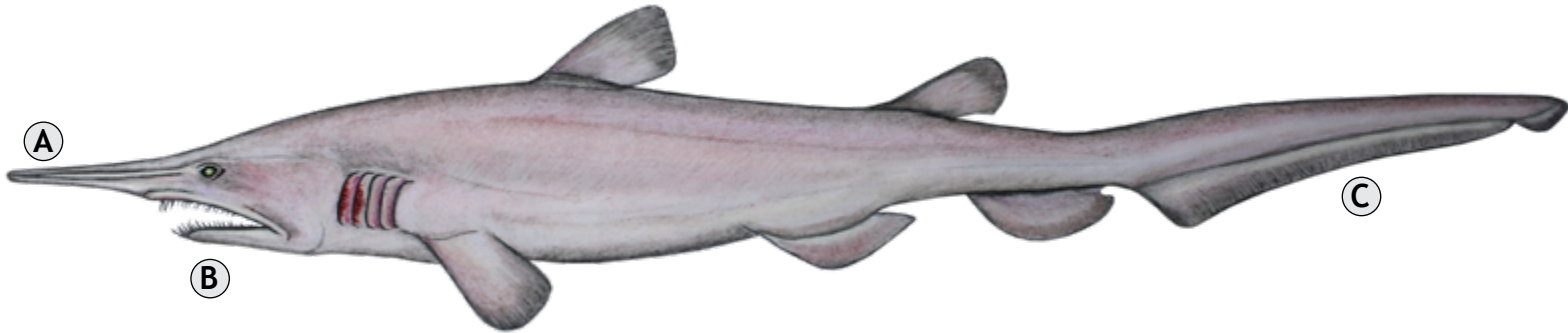
Heptranchias perlo

Mississippi
Deepwater
Sharks

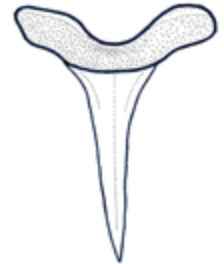
Goblin shark

Mitsukurina owstoni

Mississippi 34
Deepwater
Sharks



- A. Long, blade-like snout
- B. Jaws that can extend outward for prey capture
- C. Long caudal fin that lacks a lower lobe

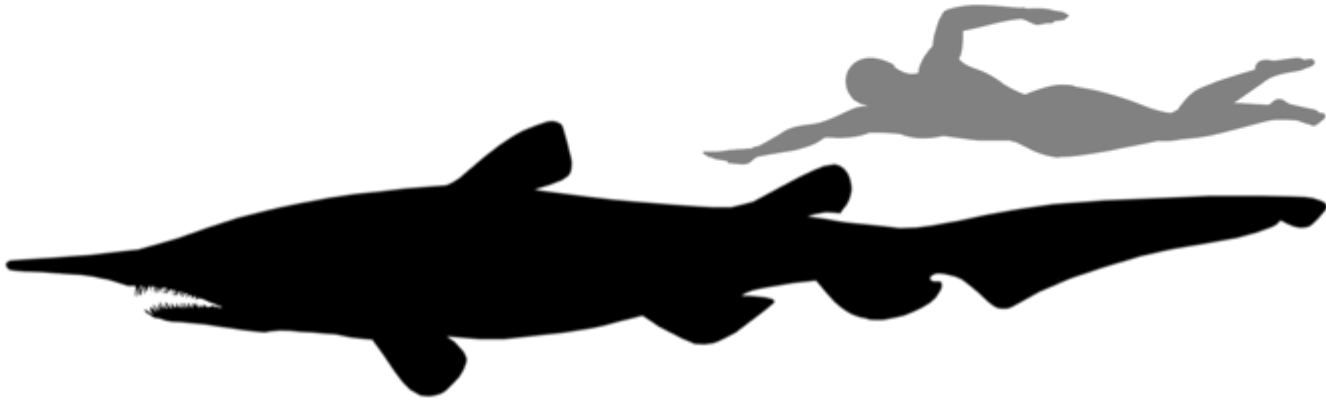


Good

Fair

Poor

Unknown



Size: Size at maturity unknown; estimates suggest 16 ft as max size

Habitat & Diet: Deep waters; feeds on fishes, squids, and crustaceans

Interesting Fact: Monotypic (the only species in its family)

Goblin shark

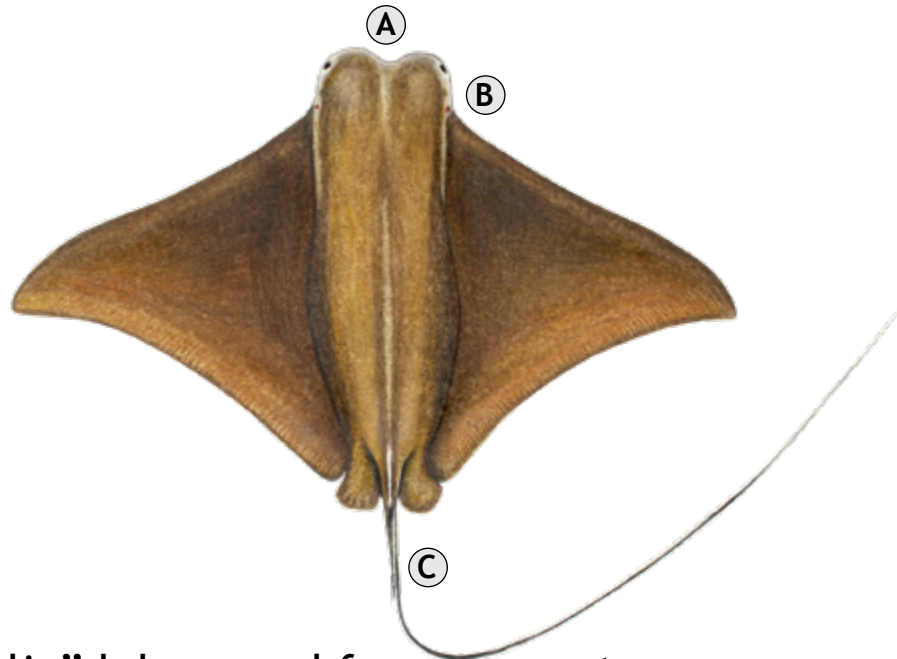
Mitsukurina owstoni

Mississippi
Deepwater
Sharks

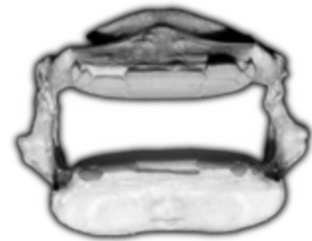
Cownose ray

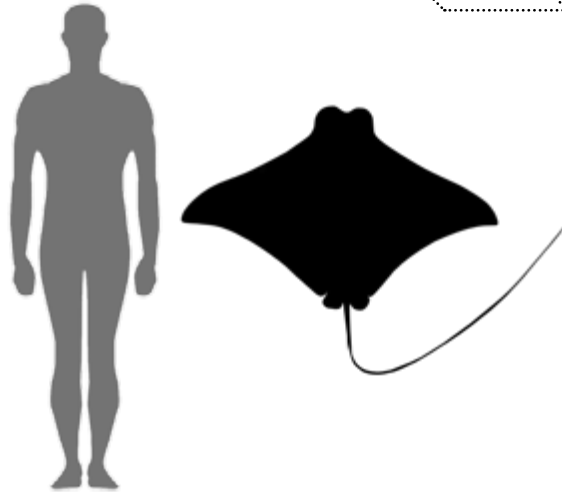
Rhinoptera bonasus

Mississippi
Aquarium
Rays 36



- A. Wide head
- B. Fleshy “cephalic” lobes used for prey capture
- C. One to two stings at base of tail





Size: 2 ft 1 in (at maturity), 3 ft 11 in (max)

Habitat & Diet: Shallow coastal waters; feeds on bivalves, crustaceans, and marine worms

Interesting Fact: Seasonally migrates in schools of up to 10,000 in the Gulf

Cownose ray

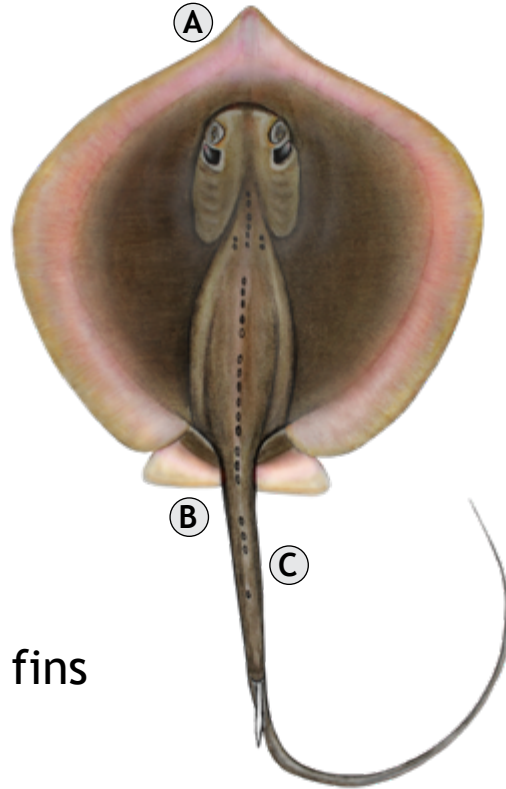
Rhinoptera bonasus

Mississippi
Aquarium
Rays

Atlantic stingray

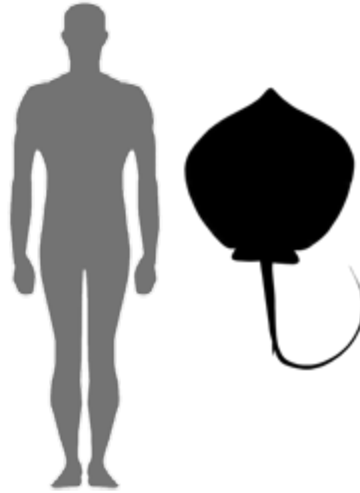
Hypanus sabinus

Mississippi
Aquarium
Rays 38



- A. Pointed snout
- B. Well developed pelvic fins
- C. Row of small thorns





Size: 10 in (at maturity), 2 ft (max)

Habitat & Diet: Coastal waters, including freshwater; feeds on small invertebrates and fishes

Interesting Fact: Only U.S. shark/ray with permanent freshwater populations (Florida)

Atlantic stingray

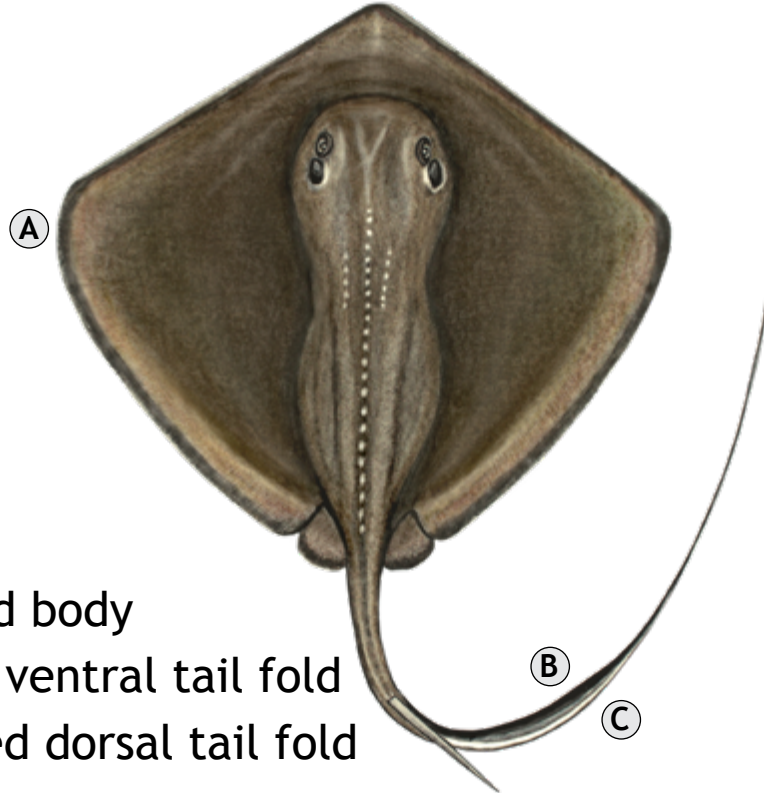
Hypanus sabinus

Mississippi
Aquarium
Rays

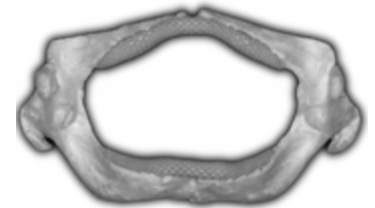
Southern stingray

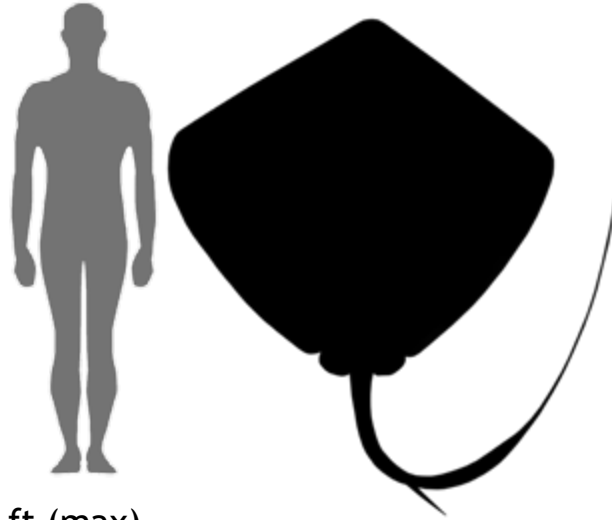
Hypanus americanus

Mississippi
Aquarium
Rays 40



- A. Diamond-shaped body
- B. Well developed ventral tail fold
- C. Poorly developed dorsal tail fold





Size: 2 ft 6 in (at maturity), 5 ft (max)

Habitat & Diet: Nearshore and coastal waters; feeds on crustaceans and fishes

Interesting Fact: Tourists often swim with this species when visiting the Caribbean

Southern stingray

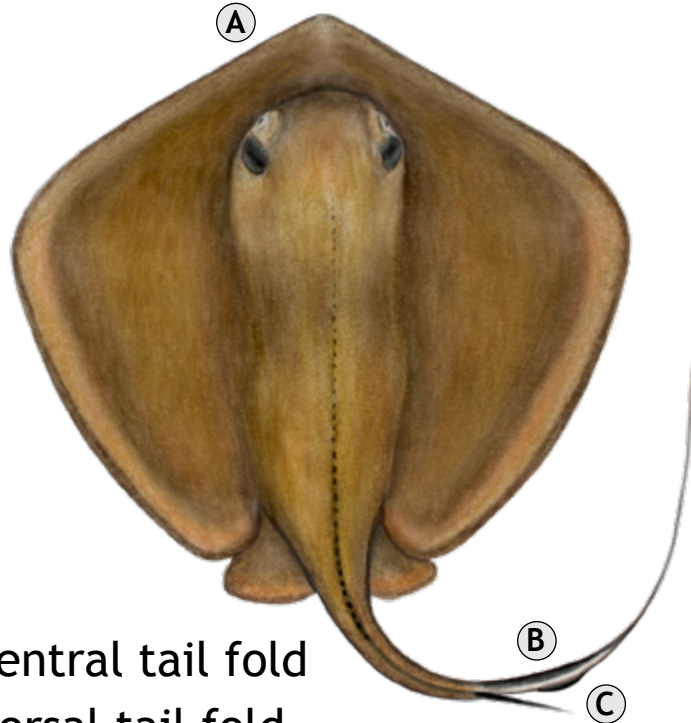
Hypanus americanus

Mississippi
Aquarium
Rays

Bluntnose stingray

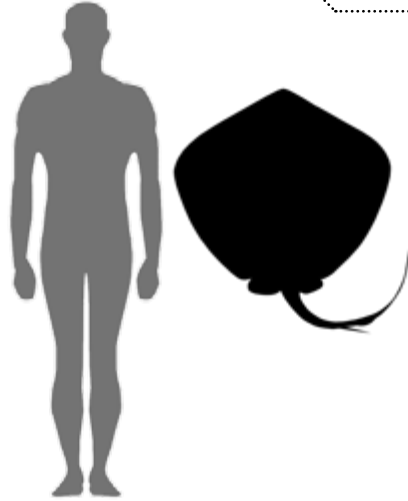
Hypanus say

Other
Mississippi
Rays 42



- A. Blunt snout
- B. Well developed ventral tail fold
- C. Well developed dorsal tail fold





Size: 1 ft 7 in (at maturity), 2 ft 7 in (max)

Habitat & Diet: Shallow coastal waters; feeds on crustaceans and fishes

Interesting Fact: Frequently has up to three stings

Bluntnose stingray

Hypanus say

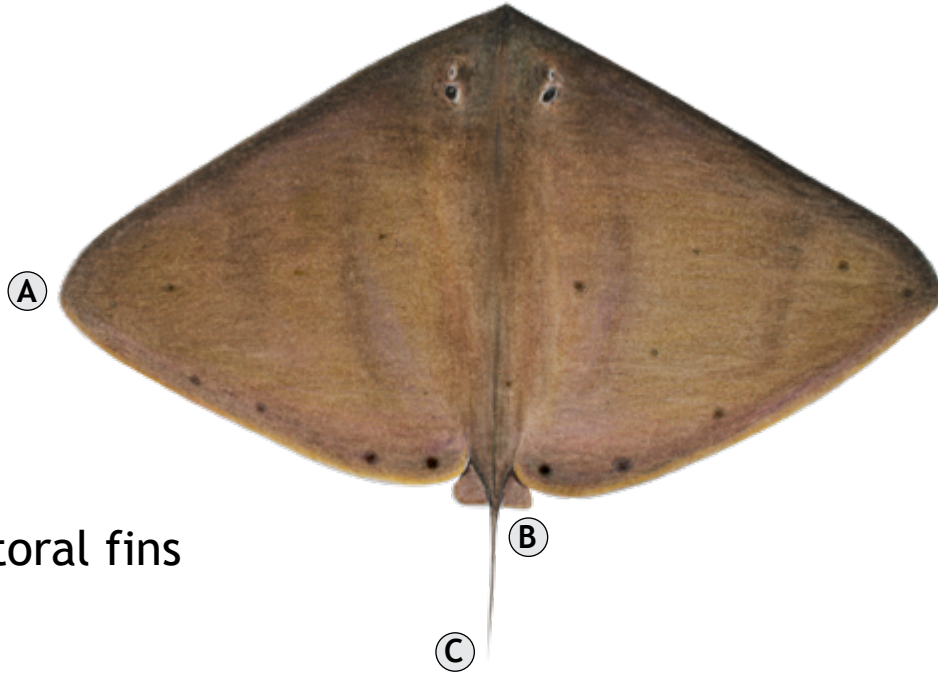
*Other
Mississippi
Rays*

Smooth butterfly ray

Gymnura lessae

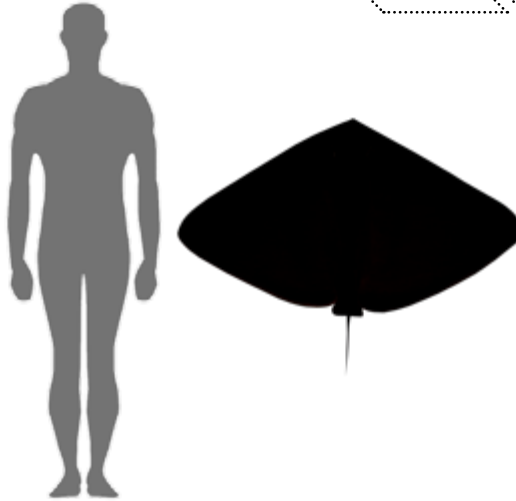
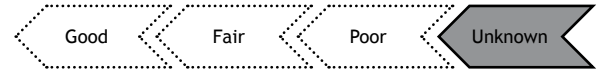
Other
Mississippi
Rays

44



- A. Wide pectoral fins
- B. No sting
- C. Short tail





Size: 1 ft 7 in (at maturity), 4 ft (max)

Habitat & Diet: Coastal waters; feeds on fishes

Interesting Fact: Ambush predator that uses its pectoral fins to strike and stun fish prey

Smooth butterfly ray

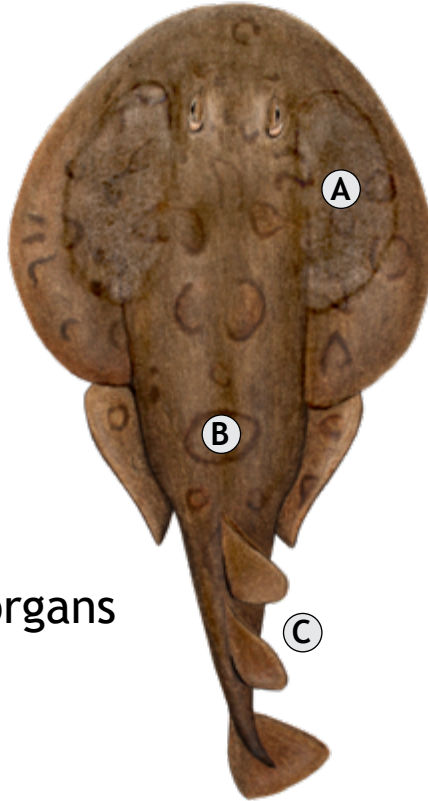
Gymnura lessae

Other
Mississippi
Rays

Lesser electric ray

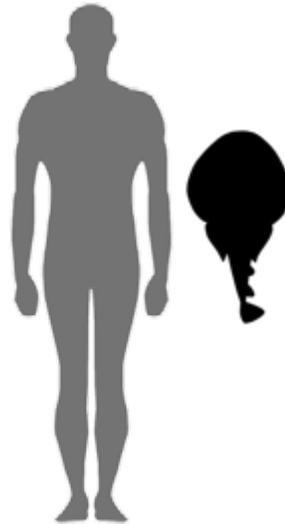
Narcine bancroftii

Other
Mississippi
Rays 46



- A. Kidney-shaped electric organs
- B. Dark ring-like markings
- C. Two tall dorsal fins





Size: 11 in (at maturity), 2 ft 1 in (max)

Habitat & Diet: Shallow coastal waters; feeds on marine worms

Interesting Fact: Can generate up to 56 volts of electricity, which it uses for defense

Lesser electric ray

Narcine bancroftii

*Other
Mississippi
Rays*

Conservation and Management

The individuals included in this guide are only a portion of the diverse shark and ray species that live off the Mississippi coast. In spite of their many sizes, shapes, and colors, most sharks and rays share a similar set of biological characteristics that include slow growth, late age at maturity, and long lifespan. Unfortunately, these “life history” characteristics mean that once depleted, it can be difficult for shark and ray populations to recover.

Overharvest, habitat loss, and pollution are some of the threats currently facing sharks and rays. Collecting baseline life history data is the first step toward managing and conserving these species. Fortunately, Mississippi Aquarium has partnered with researchers at Mississippi State University to help fill some of the data gaps for local sharks and rays. Research partnerships like this one are critical to ensuring the future sustainability of the sharks and rays that call Mississippi home.



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