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Mid-Atlantic Ocean Tank Tales

Welcome to the Atlantic City Aquarium's 25,000 open ocean tank! Housed here are sea creatures found in the Mid-Atlantic Ocean region, such as Smooth Dogfish, Permits, Gray Snappers, and Lookdowns.

Did you realize that you share the waters off the coast of New Jersey with such an array of creatures? Well, come on in, and spend some time getting to know your aquatic neighbors!

Loggerhead Sea Turtles-Groman's Family Tree

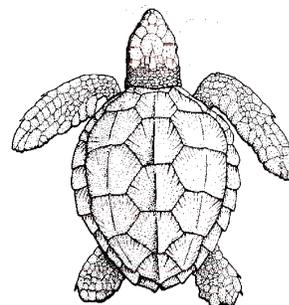
The Loggerhead Sea Turtle gets its name because of its large head and powerful jaws. The carapace is brown to reddish-brown, while the plastron is yellow. The scales on the top of the head are often a deep rusty brown color. As adults, Loggerheads can weigh from 170-500 pounds and are nearly four feet in total length.

Loggerhead Sea Turtles live estuaries, lagoons, bays, and ship channels in warm and temperate seas and oceans worldwide. They

feed on mollusks, crustaceans, fish, and other marine animals. This species of turtle usually nests on ocean beaches and other areas with suitable sand. These nests are typically made between the high tide line and the dune front.

Currently, the Loggerhead Sea Turtle is considered a "threatened" species throughout its range. Reasons for this status include loss of nesting habitat from coastal development, threats

to its nests by native and non-native predators, and watercraft strikes, to name a few. There is also a particular concern about the extensive incidental take of juvenile loggerheads in the eastern Atlantic by long line fishing vessels from several countries.



ATLANTIC CITY AQUARIUM

Fish Tales

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Special points of interest:

- Female Loggerhead Sea Turtles nest, on average, four times per season from May to August.
- A typical clutch of Loggerhead Sea Turtle eggs averages 115 eggs.
- Mature females Black Drum fish may carry more than 30 million eggs.

This Is One Smooth Dogfish that Doesn't Have a Bark!

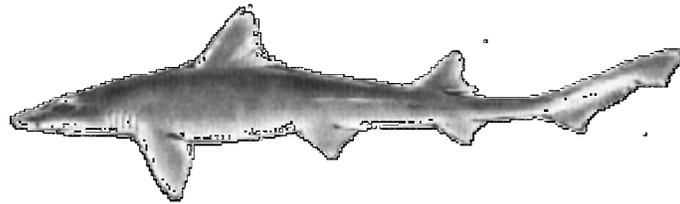
The Smooth Dogfish is a small coastal shark common to the Atlantic Ocean. They are seen as far north as Massachusetts, and south to Uruguay and Brazil. The Smooth Dogfish is most familiar as a shore fish and a bottom swimmer, commonly entering shoal harbors and bays, and even coming into fresh water.

These sharks are slender and are light gray in color. The Smooth Dogfish is easily identified among sharks by having two large spineless dorsal fins, with the second being a little smaller than the first. Its teeth are also different from the awl-like or blade-like teeth of all other sharks. If you were given the opportunity to see them, it is

enough to separate this species from other sharks. One common feature is its tail, which is of typical "shark" shape, with the upper lobe being much longer than lower.

The Smooth Dogfish ranges from about 11½ inches to about 14½ inches long when born to lengths of up to five feet at maturity. They prefer shallow water and muddy or sandy bottoms where they feed on large crabs, smaller fish, and other invertebrates, though it is probably the

most relentless enemy of the lobster.



The Cownose Ray

The **Cownose Ray** is the most common ray in the region, ranging from southern New England to Florida and the Gulf of Mexico. They are found in both ocean and bay environments. These rays can grow to over 35 pounds, and span over three feet from "wingtip to wingtip".

Cownose Rays eat clams, as well as other shellfish and invertebrates. After finding prey, the ray uses its pectoral fins to dig deep depressions in the sand. Then, they suck the

sand through their mouths and out their gill slits. Its mouth, located on its underside, has powerful grinding plates that the ray uses to crush clams and other invertebrates it sucks up. It will then spit out the hard shells and eat the soft body parts.

Though these rays are considered docile, they do have poisonous stingers at the base of their tail, close to the ray's body, like other rays. These stingers, called spines, are laced with toxic venom, but it doesn't usually

inflict damage to humans. A sting would likely possess symptoms similar to that of a bee sting.

Cownose Rays are known for their long migrations in large schools. As they swim through the water, people often confuse them for sharks. This is because when their wingtips break the surface, they resemble the dorsal fins of sharks.



The Permit

The **Permit** is a very strong fish, averaging 8-40 pounds. Their color is gray, with dark or iridescent blue above, and silvery sides. They inhabit the western Atlantic from Massachusetts to southeastern Brazil, and are most abundant in southern Florida. Permit are generally found in areas such as grass flats and sandy beaches, as well as deeper cuts, channels, and holes adjacent to these areas. In deeper waters up to 90 feet,

the Permit often congregates around structures such as reefs, jetties, and wrecks where they frequently occur in large schools.

Permits primarily scavenge on the flats and intertidal areas, entering shallow water on incoming tides. They usually travel in schools of about ten, but may school in larger numbers. Like the Bonefish, the Permit uses its

hard mouth to dig into the benthos and find its prey. Its prey includes crustaceans and mollusks, which the Permit crushes with its teeth and bony plates. However, not being a picky eater, the Permit will eat a variety of animals, including amphipods, copepods, fish, and insects. Larger adults feed on gastropods, sea urchins, bivalves, and crabs.

You Can't Beat This Drum!

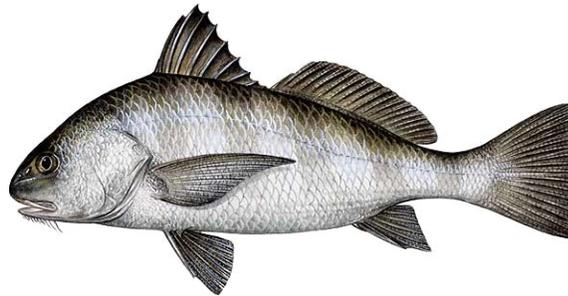
The **Black Drum** is a species of fish that is common to bays, lagoons, and coastal areas from the east coast of Florida up the Atlantic coast to New England. They are usually found on mud, sand, and shell bottoms, and medium to large specimens are common on oyster reefs.

Adult Black Drums, which commonly grow to 30+ pounds, have a gray or black colored body, whereas younger fish, up to about 15 pounds, have four or five wide, vertical, black bars set on a silver-gray body. The bars

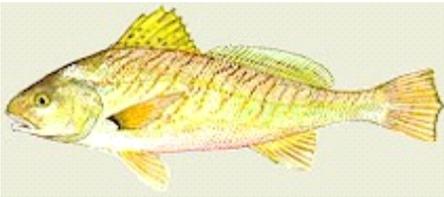
fade and eventually disappear as the fish grow larger.

All sizes of Black Drum can be identified by the barbels under their chin. These chin whiskers aid the Black Drum in finding food. When feeding, the fish swims with its head slightly tilt-

ed downward, drifting its barbels over promising food items. When the barbels touch prey, the Drum stops swimming and inhales in the food item by creating a suction with its gill covers and mouth. It will then crush the prey with its teeth, with small shell particles falling from the gills, and the rest being expelled from its mouth. The Black Drum feeds on oysters, mussels, crabs, shrimp and occasionally fish.



This Fish is a Real Hardhead!



The Atlantic Croaker, one of the most abundant inshore fish species, is found along the Atlantic coast from Cape Cod, Massachusetts to Mexico, though they are considered uncommon north of New Jersey.

Commonly known as a Hardhead, this species is part of the family of fishes that includes the Black Drum. The Croakers and Drums typically produce a drumming sound by vibrating their swim bladders with special muscles, thus giving them their names.

The Atlantic Croaker is silvery, greenish, or grayish fish with brassy spots on its sides and faint stripes

across its back. It has three to five pairs of small barbels on its chin, and its tail is slightly pointed.

Atlantic Croakers are bottom-dwelling fish that can grow to nearly two feet in length. They feed on marine worms, mollusks, crustaceans, and, occasionally, fish. They, in turn, are eaten by many other fish, including Striped Bass, Flounder, Sharks, Weakfish, Spotted Sea Trout, and Bluefish.

The Pinfish

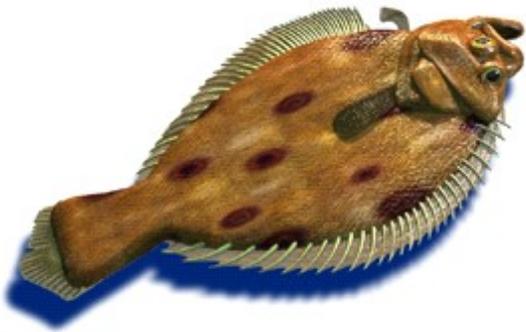
The **Pinfish** is a silvery colored fish with many narrow horizontal yellow lines and, sometimes, dim vertical bars. It has a dark patch just behind its gill cover, and the spines of dorsal and anal fin are sharp, which contributes to its name.

The Pinfish is a very small perch-like fish, ranging from three to eight inches in length. They are found around inshore grass flats in warm or temperate weather, withdrawing to deeper water with dropping temperatures.



They also can be found in areas containing rocks and bars.

The Master of Camouflage...The Summer Flounder



The Summer Flounder, also known as a Fluke, is a left-eyed flatfish that has both eyes on the left side of its body when viewed from above. The underside of the Fluke is

white, while the eyed side of this fish has 10 to 14 eye-like spots which blend in with the ocean floor.

The Flounder is a bottom-dwelling fish which partially burrows in the sediment, and it uses its flattened shape and ability to change color to its advantage when looking for food. This fish will lie in wait and ambush such prey as small fishes, squid, seaworms, shrimp, and other crustaceans. They are able to move

quickly, and they have well-developed teeth allowing them to capture prey.

Summer flounder are found in coastal waters from Canada to Florida, but are most plentiful from Massachusetts to North Carolina. They can reach up to three feet in length and weigh up to 26 pounds.

Scup

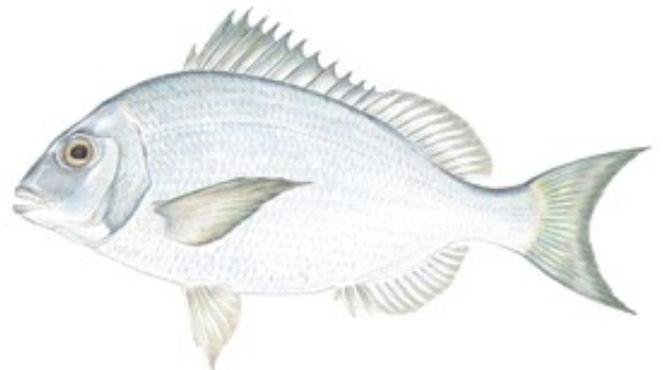
The Scup, or "Porgy," is most common from Cape Cod, Massachusetts to Cape Hatteras, North Carolina. Its body is a silvery color dotted with light blue, with 12 to 15 subtle horizontal stripes. The head is marked with dark patches, and the belly is white.

Scup grow as large as 18 inches and can weigh three to four pounds, but they average $\frac{1}{2}$ to one pound. The body is about two times as long as it is wide, and the head has a small mouth and high-set eyes. The scup has one long, continuous dorsal fin, which has one short and eleven long spines. The tail is curved in and sharply pointed on the corners.

Adult Scup are often

found in schools of similar-sized fish in areas with smooth or rocky bottoms. They are also plentiful around piers, rocks, jetties, and mussel beds where they feed on bottom invertebrates including small crabs, worms, clams, mussels, jellyfish, and sand dollars. The abundance of scup in a specific area is frequently influenced by temperature. They prefer temperatures greater than 45 degrees Fahrenheit and mostly found in water tempera-

tures from 55 to 77 degrees Fahrenheit.



The Gray Snapper

The **Gray Snapper** is found in the western Atlantic from Florida to Rio de Janeiro. Younger fish are sometimes found as far north as Massachusetts. The habitat of this fish is changeable and includes areas such as coral reefs, rock ledges, and wrecks, to a depth of about 300 feet. Closer to shore, the Gray Snapper is found over smooth bottoms, usually near pilings, seagrass meadows and mangrove thickets.

The body coloration of the Gray Snapper varies. Its lower sides and stomach are grayish with a reddish tinge, while the back and upper sides are dark gray to gray-green, and sometimes a dark brown, with reddish or orange spots in rows along the sides.



Young Gray Snappers also have a dark horizontal band from the snout through the eye. This species of snapper differs from other snappers in that it does not have the distinctive black spots on the sides, and it has a rounded, rather than a pointed, anal fin. Also, the pattern of teeth in the Gray Snapper is anchor-shaped, distinguishing it from other snappers.

The lifespan of a Gray Snapper could surpass 20 years, and they may reach an overall size of 35 inches and weigh upwards to 25 pounds. The diet of the Gray Snapper varies with age. The young fish tend to eat shrimp and other crustaceans, while adults favor small fish, crabs, or shrimp.

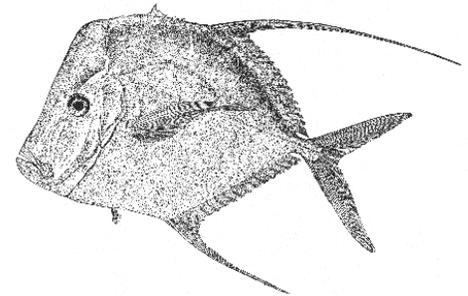
Lookdowns

The **Lookdown** is a very unusual-looking fish with an exceptionally thin body and a very long or steep forehead. It is part of a group of fish known as carangids because of its spiny fins. It's the steepness of the forehead that accounts for its downward-cast eyes, as well as its name.

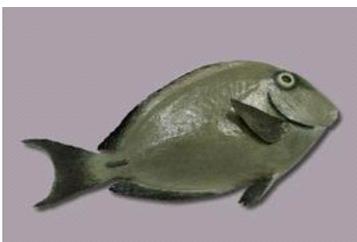
The Lookdown has a metallic coloring, with a bluish color on its back and a silvery or golden color everywhere else. It is because of this coloring that it is also called the Moonfish. Long, reed-like strands, called filaments, extend

from the dorsal spines of young Lookdowns, and this helps them hide in the grasses of salt marsh. These youngsters also have longer pelvic fins to aid in camouflage.

An adult Lookdown can grow to about 12 inches in length, weigh just over four pounds, and can be found in shallow coastal waters, from Maine to Florida and south to Uruguay. Their diet consists of small crabs, shrimp, fishes, and worms.



The Ocean Surgeon ...Is There a Doctor in the House?



The **Ocean Surgeon** is a small, gray-colored fish that ranges in length from

nine to 14 inches. It is found off the Eastern coast of the United States from Massachusetts to Bermuda. The Ocean Surgeon likes to inhabit areas with shallow bottoms that have coral or rocky formations. One distinguishing characteristic of the Ocean Surgeon, as well as other fish of this family, is a pair of spines, one on either side of the tail, which are dangerously sharp.

This fish also has a small mouth that contains a single row of teeth used for grazing on brown and green algae, the

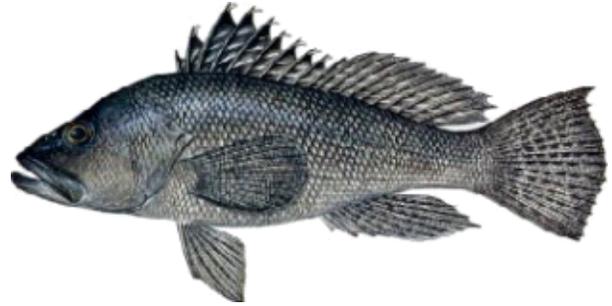
primary food sources for this herbivore. Sometimes, though, they will also feed on small invertebrates. One strange habit of the Ocean Surgeon is that it ingests large amounts of sand. It is not known exactly why, but the sand likely aids in the digestion of algae.

The Black Sea Bass

The **Black Sea Bass** is found along the Atlantic coast from Massachusetts to Florida. However, it is most abundant between Cape May, New Jersey and Cape Hatteras, North Carolina. It can be found in bays and sounds, as well as offshore in waters of over 400 feet in depth. Black Sea Bass spend most of their time close to the sea floor, and they are often found around bottom formations such as rocks, man-made reefs, wrecks, jetties, piers, and bridge pilings. The average Black Sea Bass weighs about 1½ pounds, and they feed on a wide variety of sea creatures including crabs, shrimp lobsters, razor clams, squid, and small fish.

As the name indicates, Black Sea Bass are usually black in color. They do, however,

have the ability to adjust their color to blend in with the bottom. They vary in color from gray, to brown, to bluish black, with their sides appearing mottled with darker patches and light speckles. However, their most distinguishing feature is their skin, which, when seen up close, resembles a fishnet pattern, because of the contrasting dark and light colors found on it.



Key Vocabulary

Amphipods—a small fresh or saltwater crustacean with a thin body and without a carapace

Barbels—a slender feeler resembling a whisker on the lips or jaws of some fish

Benthos—the animals and plants that live on or in the sediment at the bottom of a sea, lake, or deep river

Carangids—a spiny-finned sea fish of the family that includes the Jack and Pompano

Carapace—upper shell

Copepods—a tiny crustacean that lives among plankton and is an important food source for many fish

Dorsal—relating to or situated on the back of the body

Gastropods—a mollusk that has a head with eyes, a large flattened foot, and often a single shell, e.g. a limpet, snail, or slug

Intertidal—occurring between the high-tide and low-tide marks

Pectoral fin—side fin of a ray

Plastron—lower shell

Internet Resources

<http://www.cccturtle.org/satellitetracking.php?page=sat-florida-cape> – site provides information about satellite tracking of sea turtles.

<http://www.nationalgeographic.com/seas/> - Classroom ideas and lessons from National Geographic

<http://www.sea.edu/academics/k12.asp>—lesson plans from Sea Education Association at Woods Hole, MA

<http://sln.fi.edu/fellows/fellow8/dec98/main.html>—Exploring the Ocean through Literature (K-6)

<http://www.geocities.com/Athens/Atrium/5924/underthesea.htm>—Under the Sea—K-7 unit on marine biology

http://www.pbs.org/americanfieldguide//teachers/oceans/oceans_unit.html—Ocean Habitats: The Intertidal Zone from PBS

<http://www.seaworld.org/animal-info/animal-bytes/index.htm>—From Sea World—provides information on many sea creatures.

<http://www.ncaquariums.com/kids.htm>—this site, from North Carolina Aquariums, has a link for an awesome interactive touch tank, as well as Quicktime vides on various sea creatures.

<http://www.sheddaquarium.org/sea/> - this site contains lesson plans, interactives and an explorer's guide, with various information in both English and Spanish. It is from the Shedd's Aquarium.