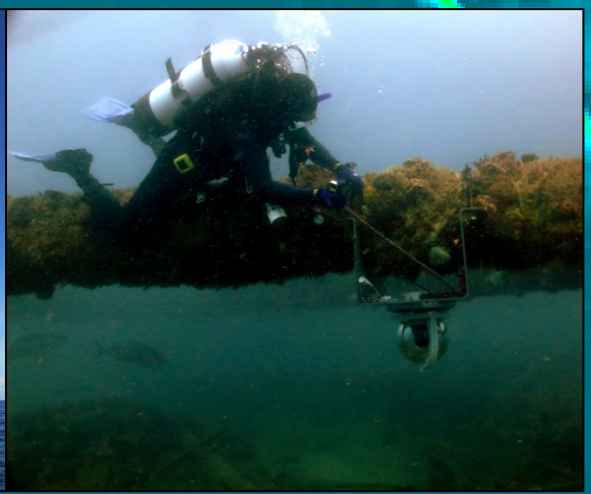
SharkCam Fishes

A Guide to Nekton at Frying Pan Tower

By Erin J. Burge, Christopher E. O'Brien, and jon-newbie



Trevor Mendelow, designer of SharkCam, on August 31, 2014, the day of the original SharkCam installation

For questions related to this guide or its usage contact Erin Burge. The suggested citation for this guide is:

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Guide version 2.0. 28 September 2016.

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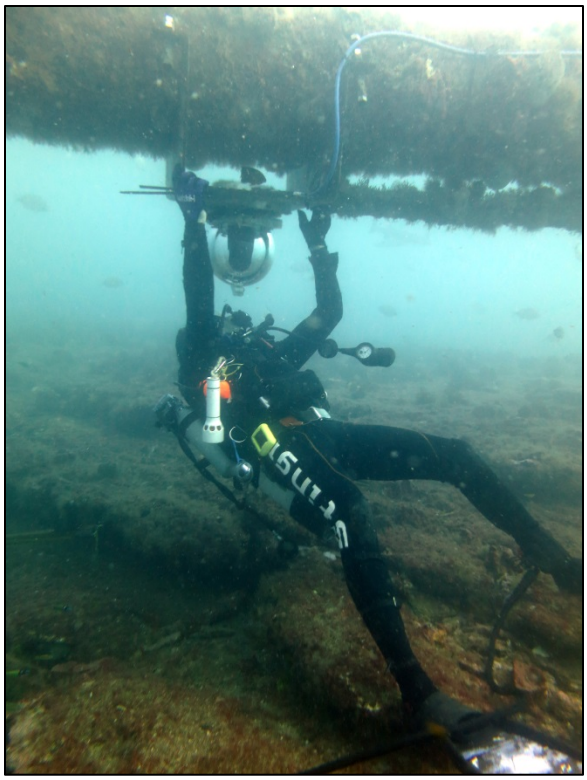
FOREWORD AND INTRODUCTION



Jim Atack inspecting the new high definition SharkCam 3.0 on September 10, 2016

Frying Pan Tower on a calm day on the Atlantic

Welcome to our guide to fishes seen on the Cape Fear SharkCam.[1] SharkCam is a streaming video website hosted by Explore.org, a project of the Annenberg Foundation.[2] The video feed comes from a solar-powered underwater camera installed 50 feet (15 meters) below the surface of the Atlantic Ocean. The camera is mounted on the Frying Pan Tower,[3] a former U.S. Coast Guard Light Station located atop a natural reef area approximately 35 miles (56 kilometers) off the coast of Cape Fear, North Carolina.[4] The area supports a huge diversity of marine life including, as the camera and guide's names suggest, sharks.

Our purpose in presenting this guide is to help viewers attach names to the many species of fish (and some non-fish) seen on SharkCam. We expect that learning the names of the fishes seen will enhance the viewer's appreciation for the ocean's denizens in two ways. First, it will make a more personal connection to them. It will no longer be just a fish; it will be a blue angelfish. It won't be just a shark; it will be that sandbar shark with the notches on its dorsal fin that we've seen before. Second, the process of naming enables access to online and print information about the amazing lives of animals beneath the waves and, ultimately, their connections to our own. Besides, we find it fun to be able to name the fish as we see them and we hope you will, too!

"We" are Dr. Erin J. Burge, Christopher E. O'Brien, and jon-newbie (an online pseudonym). Erin is a Professor of Marine Science at Coastal Carolina University,[5] was an installer of the original and current SharkCams, and is the originator of this guide. Chris was an undergraduate marine science major at CCU who completed his honors thesis research on the fish diversity at Frying Pan Tower, and he was author of many profiles in the guide. jon-newbie authored profiles, edited the guide, and contributed many of the guide's images and videos. Erin and jon-newbie are frequent contributors to discussions on the SharkCam website forum. Other contributors to the guide include additional undergraduates from Coastal Carolina University and some SharkCam viewers. Appendix 1 lists specifics on contributions to this guide. The authors very much appreciate all of the amazing screenshots submitted by SharkCam viewers.

[1] Watch the live feed from SharkCam at http://explore.org/live-cams/player/shark-cam.
[2] Learn more about Explore.org (http://explore.org/about/who_we_are/) and the Annenberg Foundation (https://www.annenberg.org/)
[3] Frying Pan Tower is a private bed and breakfast destination with a website located at http://www.fptower.com/.
[4] Google Maps location for Frying Pan Tower (https://goo.gl/maps/3HKBBnDQpuK2)
[5] More information about Coastal Carolina University is available at http://www.coastal.edu/.

SharkCam Fishes

In addition to being useful for you, the typical viewers of SharkCam, this guide is also intended for use by undergraduate marine science students working to catalog data about the fishes that are found at Frying Pan Tower. For more details on the funders of this project and the many people involved with the day-to-day operation and maintenance of SharkCam see Appendix 2. While some of the authors are scientists and scientists-to-be, this is primarily a non-scientific guide.

This guide is organized into three main sections. The Identification Images section contains pictures the reader can use to identify likely matches for a fish sighted on the streaming video. Each picture is an image taken from SharkCam[6] or archive footage[7] and is accompanied by the common and scientific names of the fish. We've also included images of some interesting non-fish passersby, like sea turtles and even a diving bird! This section is arranged into categories, or types, of fishes that are similar to each other in some important identification characteristics. The characteristics used are based heavily on the "Identification Groups" used in the book *Reef Fish Identification Florida Caribbean Bahamas*, by Paul Humann and Ned DeLoach[8]. Two other guides are particularly useful for identifying fishes seen on SharkCam, the illustrated book *A Field Guide to Coastal Fishes From Maine to Texas* by Val Kells and Kent Carpenter[9] and the online photographic guide *Florent's Guide to the Tropical Reefs*, curated by Florent Charpin[10].

Readers familiar with the technical details of groups of fishes will note that the evolutionary relationships between species, families, and orders get a little jumbled using this type of categorization approach. For example, the category "Swims with Pectoral Fins/Obvious Scales" includes many small-bodied wrasse species (Family Labridae), but does not contain the large bodied hogfish or tautog, both wrasses. The latter examples have been grouped with many of the groupers and sea basses as "Heavy Bodies/Large Lips." We feel that this approach works well for the casual viewer or interested layperson, but less well for a technical specialist.

We do need to include a little "technicalish" information to help viewers make their identifications. For example, the coloration of many fish seen on SharkCam will not match images seen in publications and on websites. This is because those images are from above the surface of the water, or in shallower water, or in deeper water using artificial lighting, or are an artist's rendering using such images. Water at the depth of SharkCam (50 feet or 15 meters) has filtered out most of the longer wavelengths of visible light, including nearly all of the red and much of the orange, leaving primarily shorter wavelengths in yellow, green, and blue. The camera "sees" the color of fishes based on the color spectrum available to illuminate them. For example, a vermillion snapper got its name from the brilliant red color it shows above or just under the water's surface. On SharkCam, the fish looks greenish-grey. On the other hand, there is still a lot of yellow light left at 50 feet, so on SharkCam a yellowtail snapper is true to its name.

The Species Profiles section contains detailed profiles of 81 fish species and 7 other animals grouped into the categories mentioned previously and arranged roughly alphabetically by common name. We have broken with this convention when two species are very likely to be mistaken for each other, for example the almaco jack and greater amberjack. Each category grouping also briefly lists the representatives by taxonomic family. Each profile describes characteristics that help the reader distinguish the profiled species from other species seen on SharkCam. The profiles also identify some confusing SharkCam look-alikes and describe how they differ from the profiled subject.

The third section, Appendix 1, contains additional information, including web links to online resources that contain a wealth of images, and scientific and non-scientific information. For species for which we have SharkCam video

[6] See Appendix 1 for credits for images provided by SharkCam viewers.
[7] Archive video of approximately two weeks of streaming SharkCam video is available from http://www.ustream.tv/exploreCapeFearSharkCam.
[8] Humann, P., DeLoach, N., 2014. Reef Fish Identification - Florida Caribbean Bahamas. 4th ed. New World Publications, Inc., Jacksonville, Florida, 548 pp. ISBN-13: 9781878348579
[9] Kells, V.A., Carpenter, K., 2011. A Field Guide to Coastal Fishes from Maine to Texas. Johns Hopkins University Press. 448 pp. ISBN-13: 9780801898389
[10] Available online at http://reefguide.org/home.html.

clips that illustrate distinguishing characteristics, we have included links to postings we made to Youtube.[11] We encourage you to investigate these species further using these and other resources you discover. Ideally you will use this guide as a gateway to greater appreciation of all of the life the oceans harbor.

Guide users will notice that the guide is extensively hyperlinked as indicated by underlined text. Links under each Identification Image can be clicked to go to the Species Profile to check for a match with your observations from SharkCam. We have added short video clips taken from SharkCam of most of the species included in the guide and they can be accessed from each Species Profile. At the bottom of each profile is a link that will allow you to go the Additional Information appendix. From there hyperlinks out to the web will help you confirm that you have correctly identified your "mystery" fish. If you find that a profile and its images aren't confirming your identification, there are links to the major sections of the guide available at the bottom of each page. Failure to find a match for your fish might mean that it is a new SharkCam species!

A new species means that you can help us improve this guide! In addition to letting us know via the SharkCam forum about new species, you can always contact us by e-mail to Erin Burge. Additionally, you will see we do not have crisp, clean images for many of the fishes identified so far. If you get a nice snapshot or video of a fish that would help others and improve the guide, please share it with us.

SharkCam is a real-time glimpse into a world that is largely foreign to most of us. Remember that the oceans are an incredibly dynamic, ever-changing environment. For example, frequent viewers will periodically see the water turn green or brown on SharkCam, reducing water clarity and limiting the number of fish seen. Green water is due to natural increases in the amount of microscopic algae, or phytoplankton, in the water. While the turbidity might be a minor irritation to viewers because of the diminished visibility, the algae feeds zooplankton and small fish, and they feed larger fish, and so on all the way up to the sharks. Be patient; an algal bloom will typically clear within a few days, visibility will return, and the fish will have greatly benefited from the additional food. Brown water is primarily due to sediments stirred up from the sea bottom, as after large storms and high waves, and will also clear up shortly.

Because of the water's effect on SharkCam fish colors, periodic turbidity, and the fact that many fish can change colors and patterns almost at will, our guide relies heavily on fish shape and color tone (e.g., light, dark) rather than true color. It also doesn't use fish size much. Everyone knows how big a mailbox or car is, so here on the surface it has meaning to say a thing is bigger or smaller than a mailbox or car. Underwater, there are no such familiar frames of reference. In addition, the camera is only one "eye," so depth perception is difficult. Saying a fish gets to be 6 or 36 inches long doesn't help much. Is it a big fish far away or a little fish close up? On SharkCam, they can appear to be the same size. To help with this, we have included relative size estimations for each species. These are based on *in situ* observations and personal experience of the authors. Some individual fish will not conform to these categorizations, but generally speaking, you, the viewers of SharkCam, should begin to incorporate the relative sizes of fish into your identifications.

So, sit back, watch SharkCam, use the guide, and enjoy. You are guaranteed to see something interesting, and maybe you will be the first to catch a glimpse of a new species that we can add to this guide!

_____

[11] SharkCam video clips of most species are on the Youtube channel at Cape Fear SharkCam Fishes.

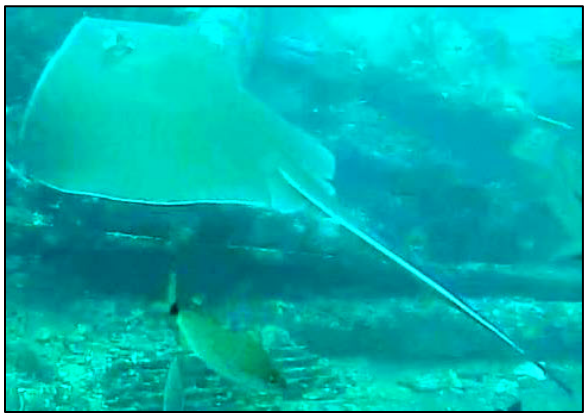
IDENTIFICATION IMAGES

Sharks and Rays

Nurse Shark *Ginglymostoma cirratum*

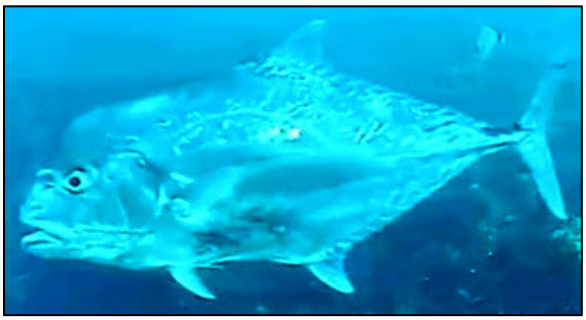
Sand Tiger Shark *Carcharias taurus*

Sandbar Shark *Carcharhinus plumbeus*



Southern Stingray *Dasyatis americana*

Silvery Fishes



African Pompano *Alectis ciliaris*

Crevalle Jack *Caranx hippos*

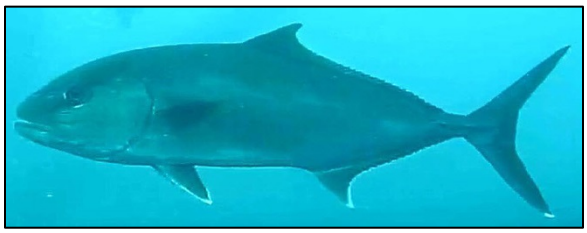
Permit *Trachinotus falcatus*

Almaco Jack *Seriola rivoliana*

SharkCam Fishes

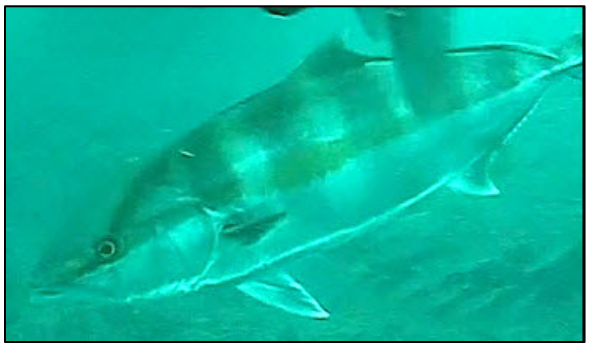
Almaco Jack *Seriola rivoliana*

Rainbow Runner *Elagatis bipinnulata*

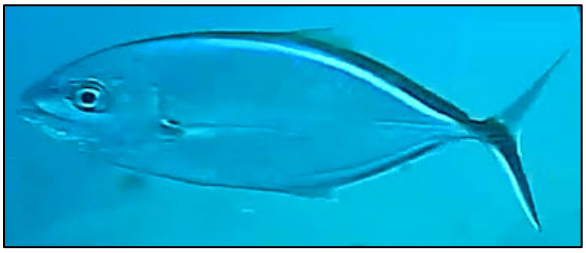


Greater Amberjack *Seriola dumerili*

Yellow Jack *Carangoides bartholomaei*



Banded Rudderfish *Seriola zonata*



Bar Jack *Caranx ruber*

Horse-eye Jack *Caranx latus*

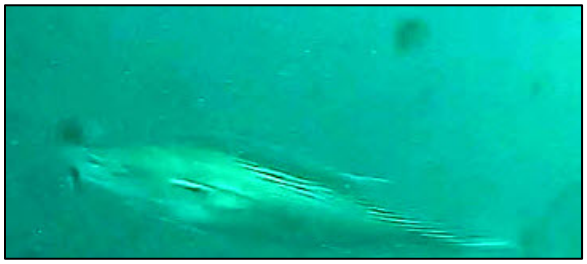
Bigeye Scad *Selar crumenophthalmus*

Blue Runner *Caranx crysos*

SharkCam Fishes

Round Scad *Decapterus punctatus*

Great Barracuda *Sphyraena barracuda*



Atlantic Bonito *Sarda sarda*

Little Tunny *Euthynnus alletteratus*

Atlantic Spadefish *Chaetodipterus faber*

Bermuda Chub *Kyphosus sectatrix*
(normal coloration)

Bermuda Chub *Kyphosus sectatrix*
(spotted phase)

SharkCam Fishes

Colorful Ovals

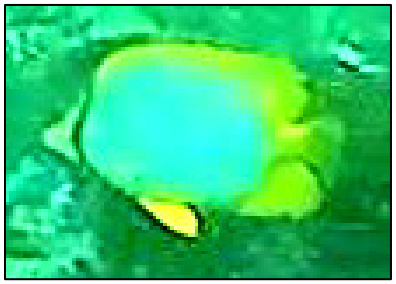
Blue Angelfish *Holacanthus bermudensis*

Blue Angelfish *Holacanthus bermudensis*

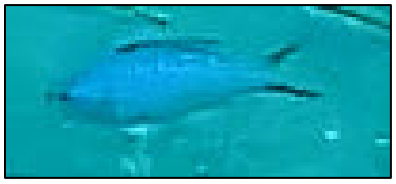
Queen Angelfish *Holacanthus ciliaris*

French Angelfish *Pomacanthus paru*

French Angelfish *Pomacanthus paru*



Spotfin Butterflyfish
Chaetodon ocellatus



Blue Chromis *Chromis cyanea*

SharkCam Fishes

Purple Reeffish *Chromis scotti* (adult)

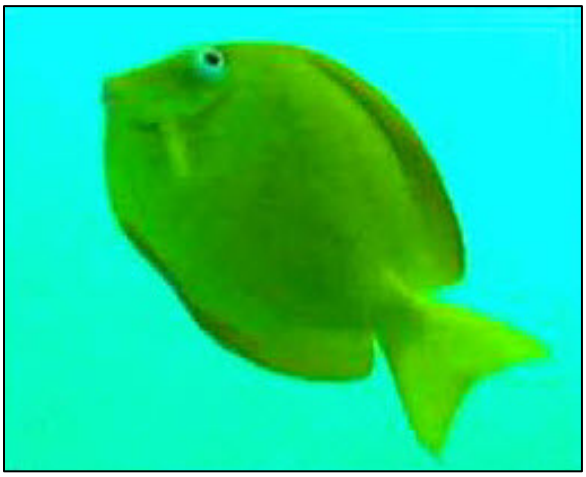
Purple Reeffish *Chromis scotti* (juvenile)

Bicolor Damselfish *Stegastes partitus*

Cocoa Damselfish *Stegastes variabilis*

Cocoa Damselfish *Stegastes variabilis*

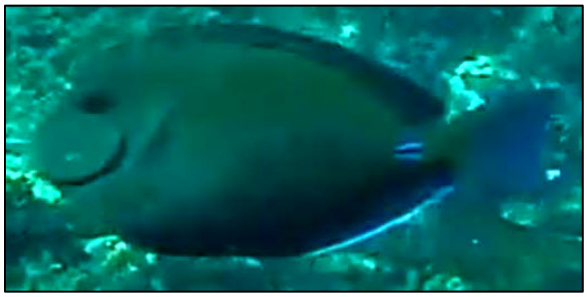
Sergeant Major *Abudefduf saxatilis*



Blue Tang *Acanthurus coeruleus* (juvenile)

SharkCam Fishes

Doctorfish *Acanthurus chirurgus*



Unidentified surgeonfish *Acanthurus* spp.

Unidentified surgeonfish *Acanthurus* spp.

Unidentified surgeonfish *Acanthurus* spp.

Swim with Pectoral Fins/Obvious Scales

Bluehead *Thalassoma bifasciatum*
(left initial phase, right transitional adult)

Bluehead *Thalassoma bifasciatum*
(initial phase, all yellow variation)

Bluehead *Thalassoma bifasciatum*
(initial phase, midbody stripe variation)

Bluehead *Thalassoma bifasciatum*
(initial phase, midbody stripe variation)

SharkCam Fishes

Bluehead *Thalassoma bifasciatum*
(initial to terminal phase intermediate)

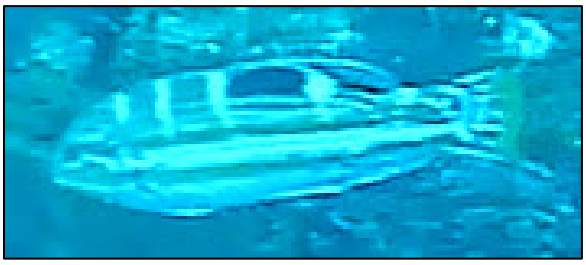
Bluehead *Thalassoma bifasciatum*
(initial to terminal phase intermediate)

Bluehead *Thalassoma bifasciatum*
(terminal phase)

Clown Wrasse *Halichoeres maculipinna*
(initial phase)

Clown Wrasse *Halichoeres maculipinna*
(terminal phase variation)

Clown Wrasse *Halichoeres maculipinna*
(terminal phase variation)



Puddingwife *Halichoeres radiatus*

Slippery Dick *Halichoeres bivittatus*

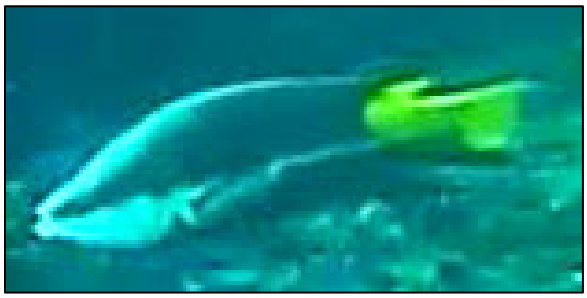
Slippery Dick *Halichoeres bivittatus*

Yellowhead Wrasse *Halichoeres garnoti*

SharkCam Fishes

Spanish Hogfish *Bodianus rufus* (juvenile)

Spanish Hogfish *Bodianus rufus* (adult)



Spotfin Hogfish *Bodianus pulchellus*

Redband Parrotfish *Sparisoma aurofrenatum* (initial phase)

Redband Parrotfish *Sparisoma aurofrenatum* (initial phase)

Redband Parrotfish *Sparisoma aurofrenatum* (terminal phase)

Redband Parrotfish *Sparisoma aurofrenatum* (terminal phase)

SharkCam Fishes

Stoplight Parrotfish *Sparisoma viride* (juvenile)

Yellowtail Parrotfish *Sparisoma rubripinne*

Heavy Bodies/Large Lips

Black Sea Bass *Centropristis striata* (adult)

Black Sea Bass *Centropristis striata* (juvenile)

Gag *Mycteroperca microlepis*

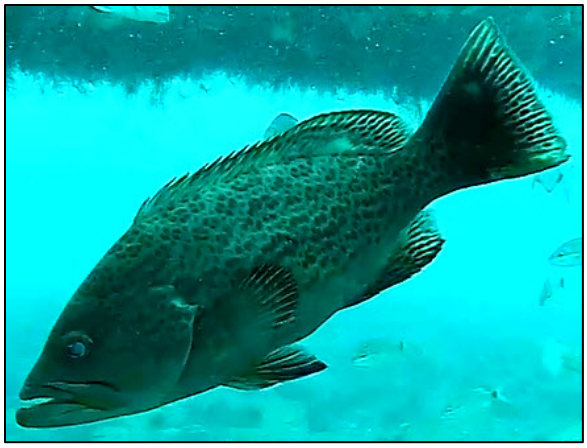
Gag *Mycteroperca microlepis*

Goliath Grouper *Epinephelus itajara*

Scamp *Mycteroperca phenax* (dark phase)

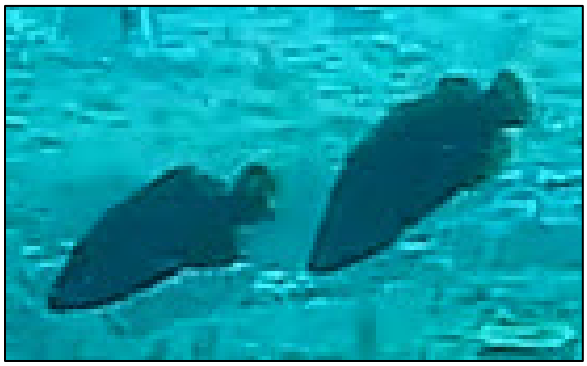
Scamp *Mycteroperca phenax* (spotted phase)

SharkCam Fishes



Scamp *Mycteroperca phenax*
(cat's paw light phase)

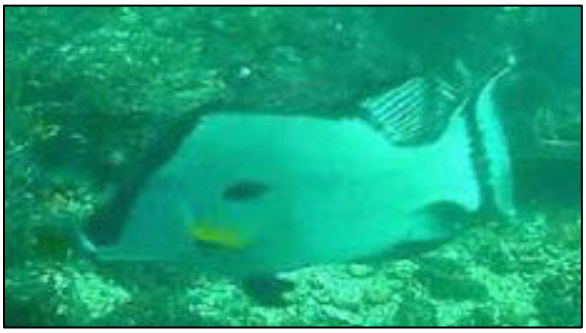
Whitespotted Soapfish *Rypticus maculatus*



Whitespotted Soapfish *Rypticus maculatus*

Hogfish *Lachnolaimus maximus* (initial phase)

Hogfish *Lachnolaimus maximus* (initial phase)



Hogfish *Lachnolaimus maximus*
(terminal phase)

Tautog *Tautoga onitis*

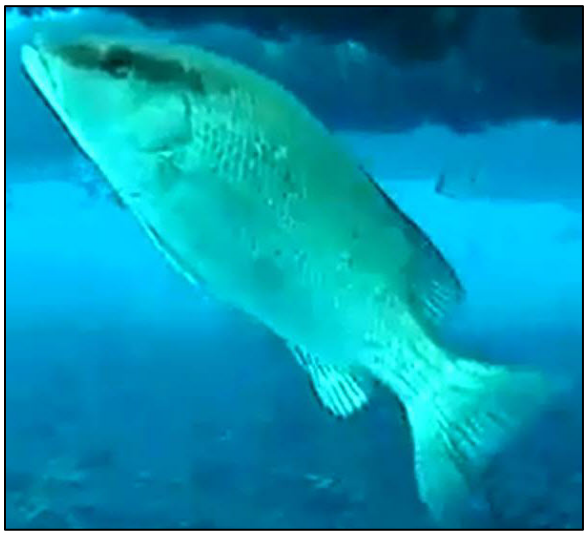
Cobia *Rachycentron canadum*

SharkCam Fishes

Sloping Heads and Tapered Bodies

Cubera Snapper *Lutjanus cyanopterus* (typical phase)

Cubera Snapper *Lutjanus cyanopterus* (barred phase)



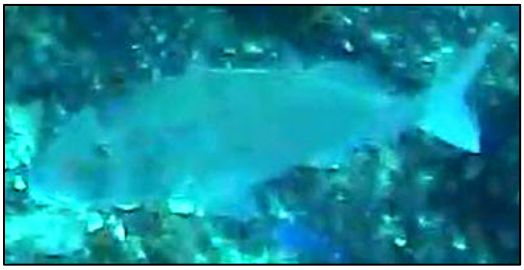
Gray Snapper *Lutjanus griseus*

Gray Snapper *Lutjanus griseus*

Vermilion Snapper *Rhomboplites aurorubens*

Yellowtail Snapper *Ocyurus chrysurus*

Knobbed Porgy *Calamus nodosus*



Red Porgy *Pagrus pagrus*

Saucereye Porgy *Calamus calamus*

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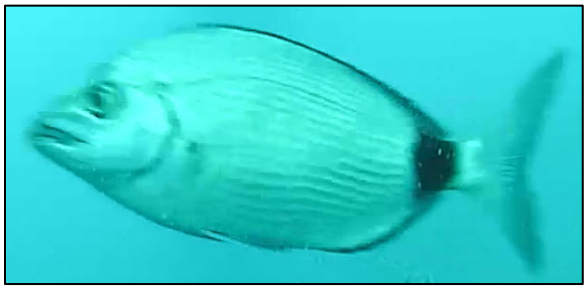
Sheepshead *Archosargus probatocephalus*



Spottail Pinfish *Diplodus holbrookii*

Striped Grunt *Haemulon striatum*

Tomtate *Haemulon aurolineatum*

Tomtate *Haemulon aurolineatum*

Tomtate *Haemulon aurolineatum*

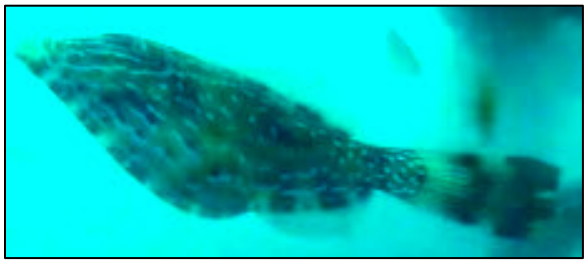
White Grunt *Haemulon plumierii*

SharkCam Fishes

Oddly-shaped Swimmers

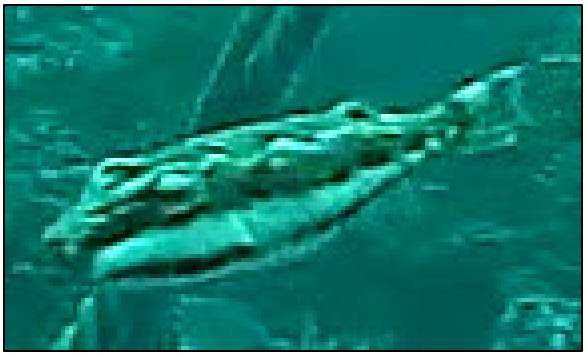
Gray Triggerfish *Balistes capriscus*

Orangespotted Filefish *Cantherhines pullus*



Scrawled Filefish *Aluterus scriptus*
(typical coloration)

Scrawled Filefish *Aluterus scriptus*
(blue coloration)



Bandtail Puffer *Sphoeroides spengleri*

Sharpnose Puffer *Canthigaster rostrata*

Sharksucker *Echeneis naucrates* (juvenile)

Sharksucker *Echeneis naucrates* (adult)

Whitefin Sharksucker *Echeneis neucratoides*

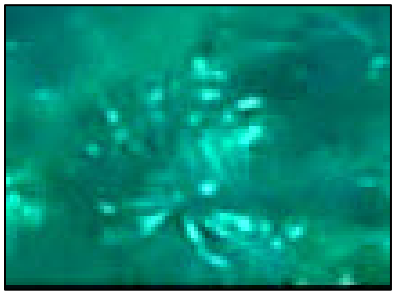
SharkCam Fishes

Bottom Fishes

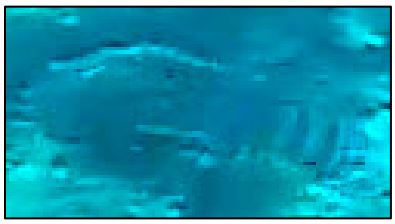
Belted Sandfish *Serranus subligarius*

Harlequin Bass *Serranus tigrinus*

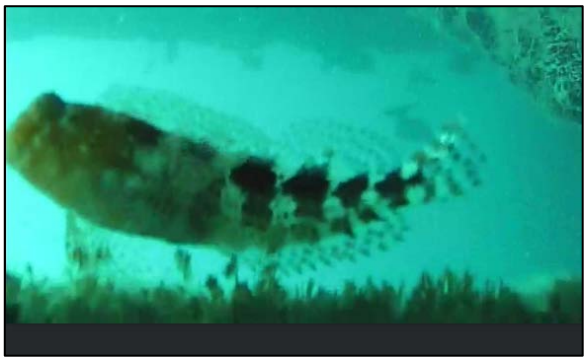
Cubbyu *Pareques umbrosus*



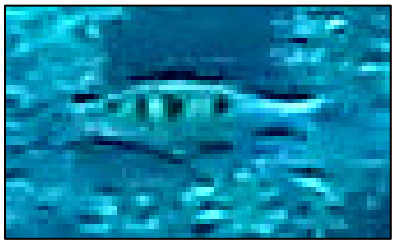
Red Lionfish *Pterois volitans*



Spotted Scorpionfish *Scorpaena plumieri*



Saddled Blenny *Malacoctenus triangulatus*



Spotted Goatfish *Pseudupeneus maculatus*

Squirrelfish *Holocentrus adscensionis*

Green Moray *Gymnothorax funebris*

SharkCam Fishes

Spotted Moray *Gymnothorax moringa*

Sharptail Eel *Myrichthys breviceps*

Not Fishes

Caribbean Spiny Lobster *Panulirus argus*

Common Loon *Gavia immer*

Common Octopus *Octopus vulgaris*

Human Freediver *Homo sapiens aquaticus*

Human Scuba Diver *Homo sapiens scubica*

SharkCam Fishes

Loggerhead Sea Turtle *Caretta caretta*

Moon Jelly *Aurelia aurita*

Loggerhead Sea Turtle *Caretta caretta*

West Indian Sea Egg *Tripneustes ventricosus*

SPECIES PROFILES

SHARKS AND RAYS

Nurse Sharks–Ginglymostomatidae
- Nurse Shark

Ragged-tooth Sharks–Odontaspididae
- Sand Tiger Shark

Requiem Sharks–Carcharhinidae
- Sandbar Shark

Whiptail Stingrays–Dasyatidae
- Southern Stingray

Nurse Shark

***Ginglymostoma cirratum* (Bonnaterre, 1788)**

Ginglymostomatidae

Distinguishing characteristics:
A nurse shark is a long, moderately slender shark with a snakelike, sinuous style of swimming. It has a rounded, blunt snout when viewed from the side or above. Both its dorsal fins* are located relatively far back on the body towards the tail. The first dorsal fin typically begins at or behind the body mid-line and it is slightly taller than the second dorsal fin. The dorsal fins are moderately sized, about the same size as its pelvic and anal fins.* Its pelvic fins are located below the first dorsal fin. Coloration tends to be a shade of brown. Close up, two barbels ("whiskers") can be seen hanging from the shark's upper lip.

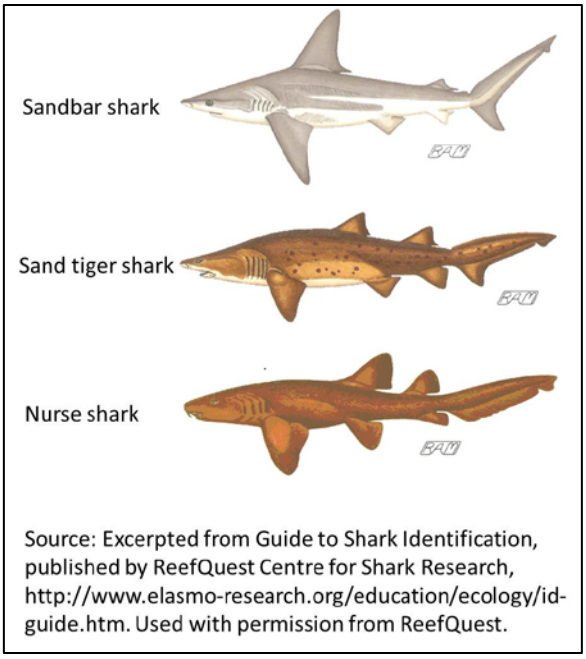
Relative abundance: Occasional –seen infrequently, not every visit. However, due to the species' tendency to take up short-term residency in areas before moving on, sightings could be of a single individual. In that case relative abundance would be Rare - few records.
Relative size: Very large (>1 m or >39 in)

Similar species: Sandbar Shark (*Carcharhinus plumbeus*), Sand Tiger Shark (*Carcharias taurus*)

Swimming styles of sandbar and sand tiger sharks look stiff compared to the sinuous movement of a swimming nurse shark. They have pointed snouts; the nurse shark has a rounded snout.

The sandbar shark has a one very tall dorsal fin located forward on the body and one short one; the nurse shark's first dorsal fin is only slightly taller than its second and both are comparatively short.

The sand tiger shark's pelvic fins are located below the space between its dorsal fins; the nurse shark's pelvic fins are located below its first dorsal fin. The sand tiger shark can hover almost motionless and sandbar sharks will be in constant motion but the nurse shark may sit motionless on the bottom or swim slowly through the camera view. Neither the sandbar nor the sand tiger shark has barbels like the nurse shark.



Source: Excerpted from Guide to Shark Identification, published by ReefQuest Centre for Shark Research, http://www.elasmo-research.org/education/ecology/id-guide.htm. Used with permission from ReefQuest.

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Pectoral fin = side fin
Pelvic fins = bottom fins closest to head
Additional information, web links, and contributions.
SharkCam video (1) (2)

Sand Tiger Shark

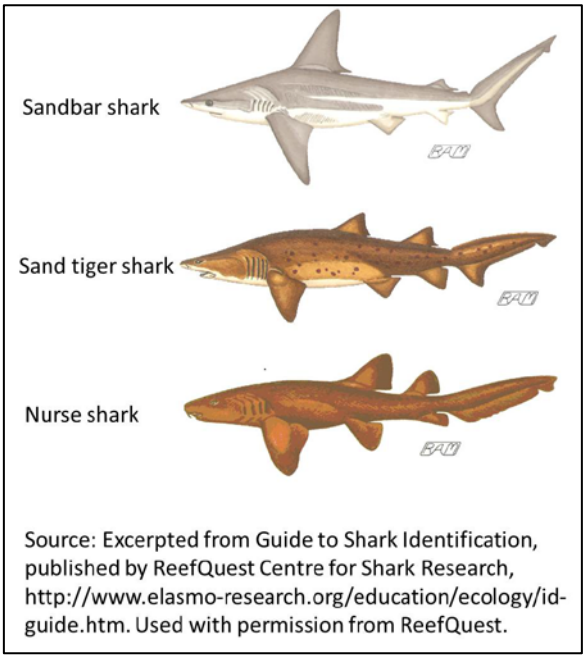
***Carcharias taurus* Rafinesque, 1810**

Odontaspididae

Distinguishing characteristics:
The sand tiger shark is the only shark seen on SharkCam that often hangs motionless or moves very slowly (stealthily) in the water. It has a thick torso and a long head that tapers to a pointed snout. Its two dorsal fins* sit rather far back on its body, towards the tail, and are roughly the same moderate size as its anal and pelvic fins.* Its pelvic fins are located below the space between the dorsal fins. On a clear close-up, dark blotches can be seen scattered about on the body and fins.

Note: Most sand tigers seen on SharkCam are large females.

Relative abundance: Seasonal. Sand tiger sharks are migratory, moving north for the warmer months and south for the cooler ones. They were absent from SharkCam from June until late October 2015, and were seen frequently (often, but not every visit) from then until early May 2016.
Relative size: Very large (>1 m or >39 in)



Source: Excerpted from Guide to Shark Identification, published by ReefQuest Centre for Shark Research, http://www.elasmo-research.org/education/ecology/id-guide.htm. Used with permission from ReefQuest.

Similar species: Sandbar Shark (*Carcharhinus plumbeus*), Nurse Shark (*Ginglymostoma cirratum*)

Sandbar sharks and sand tiger sharks have similar body shapes but the sand tiger shark does not have a tall dorsal fin like the sandbar shark does. The sandbar shark first dorsal fin is roughly as tall as its body is deep and sits closer to its head than the sand tiger shark's does, just above its pectoral fins.* Its second dorsal fin is small and sits back near its tail. Sandbar sharks are constantly swimming or gliding on SharkCam, and do not hang motionless or move slowly (stealthily) like sand tiger shark can.

Nurse sharks swim much more sinuously than the sand tiger shark's swimming motion. The two species have similar body shapes except the nurse shark's rounded snout is a strong contrast to the sand tiger's pointed snout. The nurse shark's first dorsal fin is slightly but noticeable taller than its second dorsal fin, unlike the sand tiger's equally-sized dorsal fins. The nurse shark does not have blotches like the sand tiger shark and has barbels; the sand tiger shark has no barbels.

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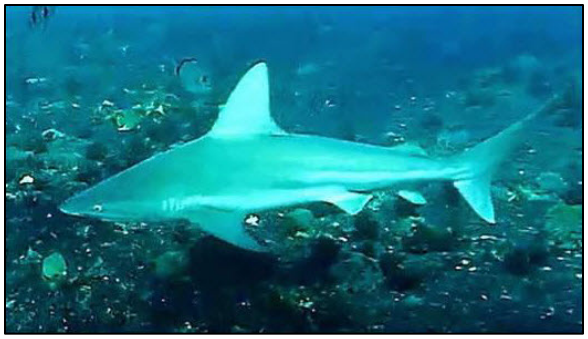
* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Pectoral fin = side fin
Pelvic fins = bottom fins closest to head
Additional information, web links, and contributions.
SharkCam video (1) (2)

Sandbar Shark

***Carcharhinus plumbeus* (Nardo, 1827)**

Carcharhinidae



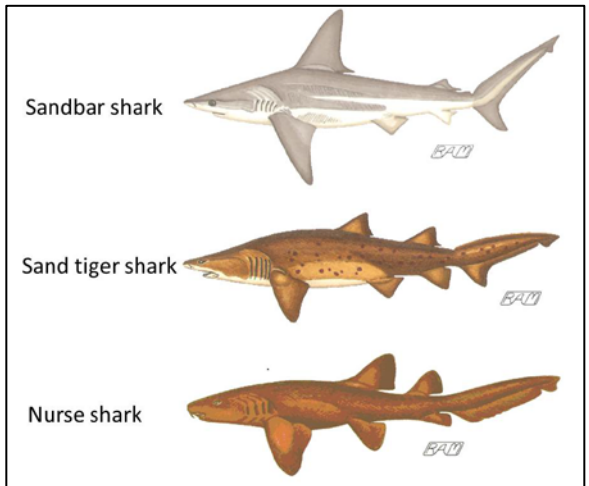
Distinguishing characteristics:
The sandbar shark looks like what people think of when they think of sharks. It has a thick torso and a long head that tapers to a pointed snout. Its first dorsal fin* starts above the midline of its pectoral fins* and is tall, generally as tall as its body is deep. Its second dorsal fin sits way in the back by the tail and is very small. Sandbar sharks are constantly swimming or gliding on SharkCam (they sink if they stop swimming).

Relative abundance: Frequent - seen often, not every visit
Relative size: Very large (>1 m or >39 in)

Similar species: Sand Tiger Shark (*Carcharias taurus*), Nurse Shark (*Ginglymostoma cirratum*)

Sand tiger sharks and sandbar sharks have similar body shapes but a sand tiger does not have a tall dorsal fin.* Its dorsal fins are the same moderate size and are both located back by its tail. The sand tiger can hang motionless or move slowly (stealthily), something the sandbar does not do. The sand tiger has dark blotches; the sandbar has none.

Nurse sharks and sandbar sharks have similar body shapes but a nurse does not have a tall dorsal fin, is more slender, and its rounded snout is in contrast to the sandbar shark's pointed snout. The nurse shark's dorsal fines are roughly the same moderate size and both are back by the tail. The nurse shark swims much more sinuously than the sandbar shark's comparatively stiff style.



Source: Excerpted from Guide to Shark Identification, published by ReefQuest Centre for Shark Research, http://www.elasmo-research.org/education/ecology/id-guide.htm. Used with permission from ReefQuest.

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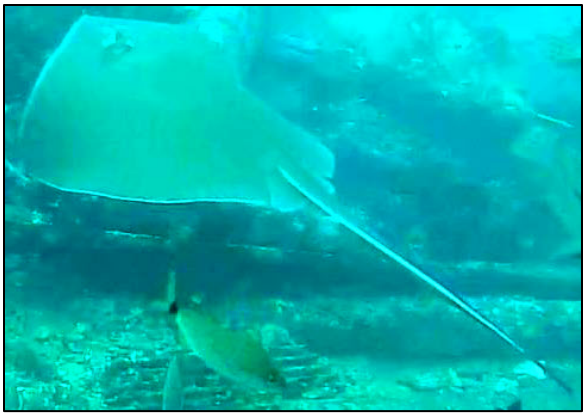
* Dorsal fin = top fin
Pectoral fin = side fin

Additional information, web links, and contributions.
SharkCam video (1) (2)

Sharks are often accompanied by smaller fish. This behavior may be a way to be close at hand to grab tidbits from a shark's meal, to discourage in-between-sized predators from attacking, and/or make it easier for them to travel to other locations (like drafting behind another vehicle). In this image, a sandbar shark is shadowed by a school of round scad, a few blue runners, and a yellow jack.

Southern Stingray

***Dasyatis americana* Hildebrand and Schroeder, 1928**
Dasyatidae



Distinguishing characteristics:
A southern stingray looks like a horizontal disk "flying" through the water, propelled by rolling two sides (modified pectoral fins*) up and down, similar to a bird in flight. The top side (dorsal surface) is dark with a slightly pointed snout, two small protrusions that contain the eyes, no dorsal fins,* and a long, whip-like tail. At a distance, intermittent flashes of the white underside are often all that can be seen as a southern stingray "flies" by.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Large (0.5–1 m or 20–39 in) to Very large (>1 m or >39 in)

Similar species: No other fish seen on SharkCam resembles the southern stingray.

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* Dorsal fin = top fin
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

SILVERY FISHES

Jacks and Pompanos–Carangidae
- African Pompano
- Almaco Jack
- Banded Rudderfish
- Bar Jack
- Bigeye Scad
- Blue Runner
- Crevalle Jack
- Greater Amberjack
- Horse-eye Jack
- Permit
- Rainbow Runner
- Round Scad
- Yellow Jack

Mackerels, Tunas and Bonitos–Scombridae
- Atlantic Bonito
- Little Tunny

Barracudas–Sphyraenidae
- Great Barracuda

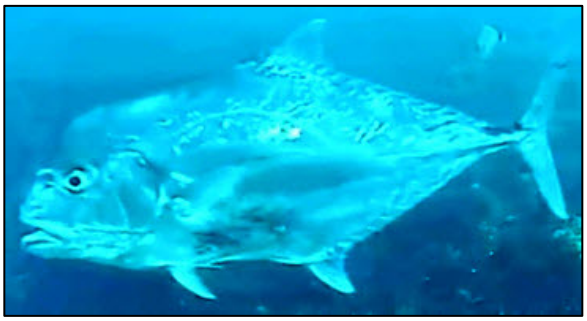
Spadefishes–Ephippidae
- Atlantic Spadefish

Sea chubs–Kyphosidae
- Bermuda Chub

African Pompano

***Alectis ciliaris* (Bloch, 1787)**

Carangidae



Distinguishing characteristics:

An African pompano shares several characteristics with other members of the jack family: a deeply forked tail, pointed fins (including both lobes of the tail), and a silvery-gray color. From the side, the body is broad, shaped roughly as an oval. The outline of the face and forehead form a straight line that rises steeply from the mouth to form a distinct bump where it joins the outline of the back. The dorsal and anal fins* are triangular and short. Overall, the African pompano has a metallic, mirror-like sheen. From the front, the fish is unusually thin.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Large (0.5–1 m or 20–39 in)

Similar species: Crevalle Jack (*Caranx hippos*), Permit (*Trachinotus falcatus*)

The crevalle jack and the permit share with the African pompano the several characteristics of the jack family.

From the side, the crevalle jack face and forehead outline forms a smooth arc with the back (no bump like the African pompano). The crevalle jack dorsal and anal fins are tall and scythe shaped (African pompano fins small and triangular) and on SharkCam are usually white (African pompano fins silvery gray). When close enough, crevalle jacks show a small black spot above the pectoral fin (African pompano lacks this).

The permit face and forehead also form a smooth arc with the back (no bump like the African pompano). Permit dorsal and anal fins are tall and thin (African pompano fins small and triangular) and on SharkCam are dark, especially the pectoral fin* (African pompano fins silvery gray). The permit has a darker blotch on its side and a white belly patch that, at close viewing, shows a mustard-yellow tint ahead of the anal fin (African pompano shows none of these features).

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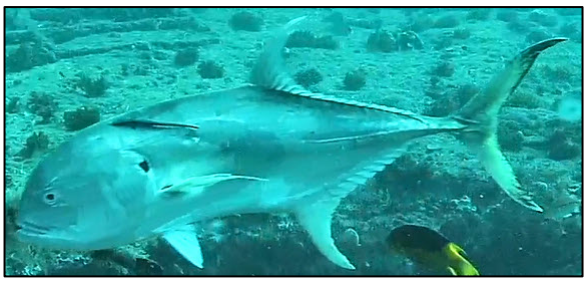
* Anal fin = bottom fin closest to tail
Dorsal fin – top fin
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1)

Crevalle Jack

***Caranx hippos* (Linnaeus, 1766)**

Carangidae



Distinguishing characteristics:
Like other members of the jack family, a crevalle jack has a deeply forked tail, rather pointed fins (including both lobes of tail), and a silvery-gray color. From the side, the body is broad, shaped like an elongated oval with a blunt front. The face and forehead outline forms a smooth arc with the back. The dorsal, anal, and pectoral fins* are long, scythe shaped, and on SharkCam are usually white. There are two small black spots, one on the base of the pectoral fin* and one above the pectoral fin.

Seen face-on, the crevalle jack has unusually forward-facing eyes, relative to most other fish. They are often seen loosely aggregated groups of a few individuals.

Relative abundance: Frequent - seen often, not every visit
Relative size: Large (0.5–1 m or 20–39 in) to Very large (>1 m or >39 in)

Similar species: African Pompano *(Alectis ciliaris*), Permit (*Trachinotus falcatus*), Horse-eye Jack (*Caranx latus*)

Other large bodied jacks, like African pompano, permit, and horse-eye jack have body and fin shapes and colors that are similar to those of the crevalle jack.

The outline of the African pompano head is more angular, with a distinct bump, than the smooth arc of the crevalle jack head. The African pompano is noticeably thin, has shorter dorsal and anal fins,* lacks the crevalle jack's dark spots, and has a metallic, mirror-like sheen the crevalle jack lacks.

The permit also has a broad, oval-shaped body but it is rounder, less elongated, than the crevalle jack. The permit has a darker botch on its side and a white belly patch that, at close viewing, shows a mustard-yellow tint ahead of the anal fin,* features the crevalle jack lacks. SharkCam permits have dark fins, especially the short pectoral fin, whereas those of the crevalle jack generally are white.

The horse-eye jack lacks the crevalle jack's dark spot and, unlike the crevalle, has large eyes and usually has a bright yellow tail and a narrow, dark stripe that runs from the tail about half way to the mouth.

A crevalle jack, with its elongated shape, deeply forked tail, and pointed fins and tail lobes, could be mistaken for some species of shark. This seems particularly true when viewed on a website called "SharkCam." SharkCam shark species, however, do not have symmetrical tails like the crevalle jack. Instead, the upper lobe of the sharks' tail is much larger than the lower lobe, being a significant portion of the sharks' length.

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Permit

***Trachinotus falcatus* (Linnaeus, 1758)**
Carangidae

Distinguishing characteristics:
Like other members of the jack family, the permit has a deeply forked tail, pointed fins (including both lobes of tail), a slender body cross section, and a silvery-gray color. From the side, most SharkCam permits look relatively round, with an occasional larger individual looking more elongated, or oval shaped. SharkCam permits have long, dark dorsal,* anal,* and tail fins and a short, dark pectoral fin,* The permit has a darker blotch on its side and a white belly patch that, at close viewing, shows a mustard-yellow tint ahead of the anal fin.* The white belly patch shows well under poor lighting conditions and when the fish is swimming rapidly.

Relative abundance: Frequent - seen often, not every visit
Relative size: Large (0.5–1 m or 20–39 in)

Similar species: African Pompano (*Alectis ciliaris*), Crevalle Jack (*Caranx hippos*), Horse-eye Jack (*C. latus*)

The African pompano, crevalle jack, and horse-eye jack have body and fin shapes that are similar to those of the permit. From the side, the crevalle jack is shaped like an elongated oval, compared to the permit's typically round shape. The crevalle lacks the darker blotch on the side, the white belly patch, and the short, dark pectoral fin of the permit, and has a dark spot above its pectoral fin that the permit lacks. Typically, the crevalle's fins look white compared to the permit's fins that look dark.

The outline of the African pompano head is more angular, with a distinct bump, than the smooth arc of the permit head. The African pompano has shorter dorsal and anal fins, and has a metallic, mirror-like sheen. It lacks the permit's darker patch on the side, white belly patch, and short, dark pectoral fin.

From the side, the horse-eye jack is oval-shaped with large eyes, a narrow, dark stripe that runs from the tail about half way to the mouth, and a tail that is usually bright yellow. The horse-eye jack lacks the permit's darker patch on the side, white belly patch, and short, dark pectoral fin.

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1)

Almaco Jack

***Seriola rivoliana* Valenciennes in Cuvier and Valenciennes, 1833**

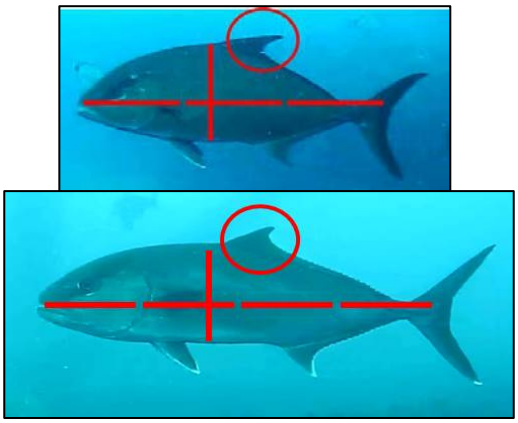
Carangidae

Distinguishing characteristics:
An almaco jack shares several characteristics with other members of the jack family: a deeply forked tail, rather pointed fins (including both lobes of tail), and a slender body cross section. From the side, the body is oval shaped with a tall dorsal fin* shaped like a scythe blade. The almaco's body is about three times as long as it is tall. The body color ranges from silvery gray to a dark olive but the fins are dark colored. A distinct black band runs from the mouth through the eye and up to the front of the dorsal fin.* The band can lighten to be almost nonexistent or darken dramatically. It is typically fairly prominent in the almaco jack. From the front, the almaco is shaped like a slender oval.

Relative abundance: Common - seen most visits in small numbers
Relative size: Medium (20 cm–0.5 m or 8–20 in) to Large (0.5–1 m or 20–39 in)

Similar species: Greater Amberjack (*Seriola dumerili*)

The greater amberjack looks like an elongated almaco jack with a short dorsal fin. The almaco's body is about three times as long as it is tall; the greater amberjack's body is about four times as long as it is tall. From the front, the greater amberjack is usually more circular in cross section than the almaco's slender oval.



Comparative view of almaco jack (above), greater amberjack (below)

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* Dorsal fin = top fin

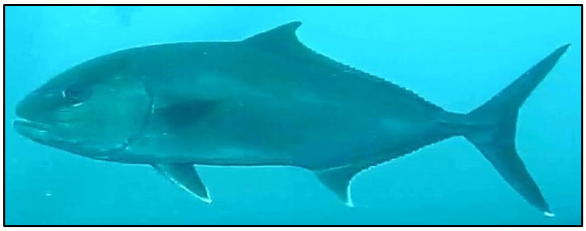
Additional information, web links, and contributions.

SharkCam video (1)

Greater Amberjack

***Seriola dumerili* (Risso, 1810)**

Carangidae



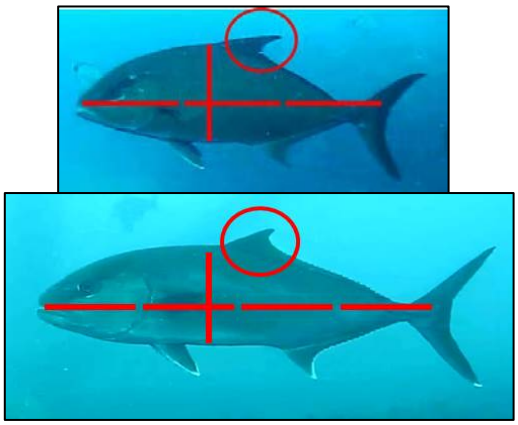
Distinguishing characteristics:
A greater amberjack has a deeply forked tail and rather pointed fins (including both lobes of tail), characteristics it shares with other members of the jack family. From the side, the body resembles an elongated oval that is about four times as long as it is tall. The greater amberjack has a short dorsal fin* and a color that ranges from silvery gray to amber, with a darker pectoral fin.* A black bar, called a nuchal mark, runs from the mouth through the eye and up to the front of the dorsal fin.* The nuchal mark can lighten to be almost nonexistent or darken dramatically.

Relative abundance: Common - seen most visits in small numbers
Relative size: Large (0.5–1 m or 20–39 in) to Very large (>1 m or >39 in)

Similar species: Almaco Jack (*Seriola rivoliana*)

The almaco jack is less elongated than the greater amberjack, looking more like an oval. The almaco's body is about three times as long as it is tall; the greater amberjack body is about four times as long as it is tall. The almaco has a taller, scythe-like dorsal fin,* and all fins are dark.

A greater amberjack, with its elongated shape, deeply forked tail, and pointed fins and tail lobes, can be mistaken for some species of shark. This seems particularly true when viewed on a website called the "SharkCam." SharkCam shark species, however, do not have symmetrical tails like the greater amberjack. Instead, the upper lobe of the sharks' tail is much larger than the lower lobe, being a significant portion of the sharks' length. No western Atlantic shark species has a nuchal mark like the greater amberjack.



Comparative view of almaco jack (above), greater amberjack (below)

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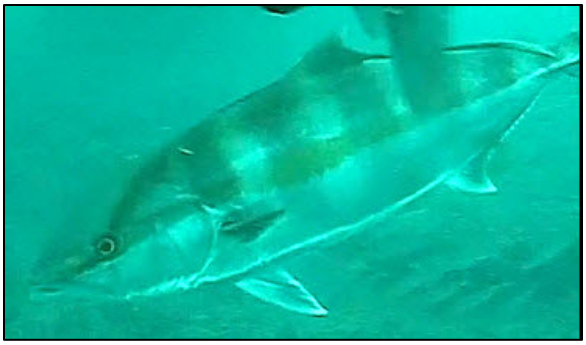
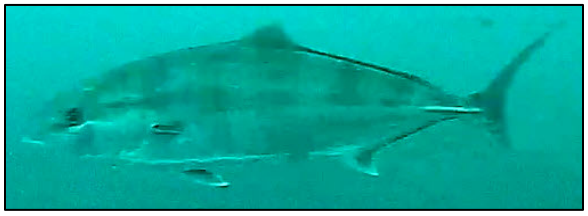
* Dorsal fin = top fin
Pectoral fin = fin on side of body
Additional information, web links, and contributions.
SharkCam video (1)

Banded Rudderfish

***Seriola zonata* (Mitchill, 1815)**

Carangidae





Distinguishing characteristics:
A juvenile banded rudderfish has a light-colored body shaped like an elongated oval, with six dark bars* spaced along its body. It has a dark band which runs from the mouth, across the eye, to the front of the dorsal fin.* The band can lighten to be almost nonexistent or darken dramatically. Adult banded rudderfish have not been seen on SharkCam.

Note: The fish in the lower image has part of the lower lobe of its tail missing.

Relative abundance: Rare – few records
Relative size: Medium (20 cm–0.5 m or 8–20 in) to Large (0.5–1 m or 20–39 in). Juveniles lose their bars when they are about 28 cm long (11 in).

Similar species: Greater Amberjack (*Seriola dumerili*), Almaco Jack (*S. rivoliana*), Sergeant Major (*Abudefduf saxatilis*), Sheepshead (*Archosargus probatocephalus*), Atlantic Spadefish (*Chaetodipterus faber*)

Greater amberjack and almaco jack have similar silhouettes and are generally about the same size as the banded rudderfish. The almaco jack body is deeper with a higher dorsal fin. Both will lack the bars of the banded rudderfish.

Three other fish seen on SharkCam have dark bars**:** sergeant majors, sheepsheads, and Atlantic spadefish. Sergeant majors and sheepsheads have bodies that are deeper (proportionately taller) than the banded rudderfish and the Atlantic spadefish has an unmistakable triangular shape. None of the three has a diagonal band that runs through the eye.

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* Bar = vertical marking
Additional information, web links, and contributions.
SharkCam video (1) (2)

Horse-eye Jack

***Caranx latus* Agassiz in Spix and Agassiz, 1831**
Carangidae

Distinguishing characteristics:
A horse-eye jack shares several characteristics with other members of the jack family: a deeply forked tail, rather pointed fins (including both lobes of tail), a slender body cross section, and a silvery-gray body color. From the side, its body is oval-shaped with a large eye that has a diameter that approximately equals the distance from the eye to the snout. The horse-eye jack has a narrow dark stripe* that runs from the tail about half way to the mouth, and its tail is usually bright yellow.

Relative abundance: Rare – few records
Relative size: Large (0.5–1 m or 20–39 in)

Similar species: Blue Runner (*Caranx crysos*), Bar Jack (*C. ruber*), Yellow Jack (*Carangoides bartholomaei*), Yellowtail Snapper (*Ocyurus chrysurus*), Vermilion Snapper (*Rhomboplites aurorubens*)

Several other jack species can be confused with the horse-eye jack but lack its large eyes and dark stripe, and have their own distinguishing features. The blue runner has a dark tip on the tail lobes and two short, bright white horizontal lines, one above the base of the pectoral fin* and one at the base. The bar jack has a dark stripe along the dorsal fin* and down to the lower lobe of the tail, accompanied by a bright blue or white line beneath it. The fins of the yellow jack have a yellow cast, especially the lower lobe of the tail. The crevalle jack has a dark spot just above the pectoral fin.

Although not a jack, the yellowtail snapper has a similar shape, light coloring, and a forked yellow tail with pointed lobes. Unlike the horse-eye jack, the yellowtail snapper also has a yellow stripe that runs from the tail towards the eye, turning dark as it goes.

A vermilion snapper also has a large eye, like the horse-eye jack, but its body is more slender with a tail that is more square, with only a shallow fork, and not yellow.

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* Dorsal fin = top fin
Pectoral fin = side fin
Stripe = horizontal marking
Additional information, web links, and contributions.

Blue Runner

***Caranx crysos* (Mitchill, 1815)**

Carangidae

Distinguishing characteristics:
A blue runner shares several characteristics with other members of the jack a deeply forked tail, rather pointed fins (including both lobes of tail), and a slender body cross section. The body color ranges from a silvery-gray to a silvery blue. From the side, the body is oval-shaped and with dark tips to its tail. SharkCam blue runners show two short, bright white horizontal lines, one above the base of the pectoral fin* and one at the base. The white lines show up well even under poor lighting conditions and when the fish moves rapidly.

Relative abundance: Frequent - seen often, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Bar Jack (*Caranx ruber*), Horse-eye Jack (*C. latus*), Yellow Jack (*Carangoides bartholomaei*), Yellowtail Snapper (*Ocyurus chrysurus*)

Several other jack species can be confused with the blue runner but lack the blue runner's bright white lines and have their own distinguishing features. The bar jack has a dark stripe along its dorsal fin and down to the lower lobe of its tail, accompanied by a bright blue or white line beneath it. The horse-eye jack has large eyes and usually has a bright yellow tail and a narrow, dark stripe that runs from the tail about half way to the mouth. The fins of the yellow jack have a yellow cast, especially the lower lobe of the tail. Although not a jack, the yellowtail snapper has a similar shape and light coloring but has a yellow tail and a yellow stripe that starts at the tail and becomes darker towards the eye.

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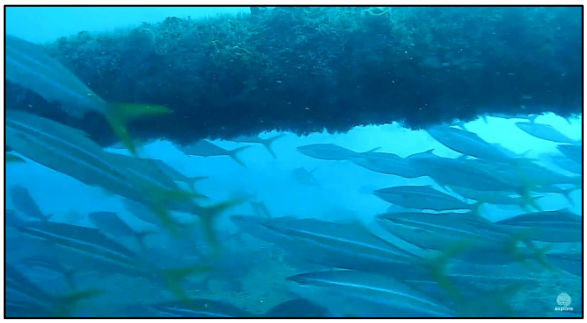
* Dorsal fin = top fin
Pectoral fin = side fin
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1)

Rainbow Runner

***Elagatis bipinnulata* (Quoy and Gaimard, 1825)**
Carangidae



Distinguishing characteristics:
From the side, a rainbow runner is shaped like a slender oval with a rather pointed head. The tail is jack-like, deeply forked with pointed lobes, and is bright yellow. The body is light gray below and darker gray above, with two bright, light blue, almost white, stripes* down the middle.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in) to Large (0.5–1 m or 20–39 in)

Similar Species: Cobia (*Rachycentron canadum*), Yellowtail Snapper (*Ocyurus chrysurus*)

The cobia has a similar body shape but with a flattened head, a large, shallowly forked tail with sharp tips, and a tall, triangular dorsal fin.* The cobia overall coloration is dark, although it may have some lighter tones underneath, and the tail is not yellow. All cobia seen on SharkCam have been substantially larger than a rainbow runner.

The yellowtail snapper has a forked yellow tail with pointed lobes, like the rainbow runner. Unlike the rainbow runner, the yellowtail snapper also has a stripe that starts as yellow at the tail and runs towards the snout, becoming darker towards the eye.

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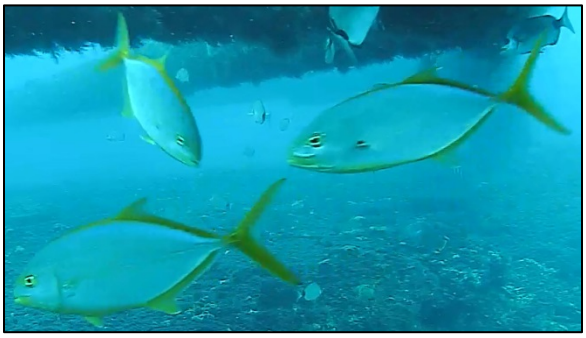
* Dorsal fin = top fin
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1)

Yellow Jack

***Carangoides bartholomaei* (Cuvier in Cuvier and Valenciennes, 1833)**
Carangidae



Distinguishing characteristics:
A yellow jack shares several characteristics with other members of the jack a deeply forked tail, rather pointed fins (including both lobes of the tail), a slender body cross section, and a silvery-gray color. From the side, the body is oval-shaped. The yellow jack's fins have a yellow cast, especially the lower lobe of the tail.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Horse-eye Jack (*Caranx latus*), Blue Runner (*C. crysos*), Bar Jack (*C. ruber*), Yellowtail Snapper (*Ocyurus chrysurus*)

Other jack species share with the yellow jack the several characteristics of the jack family. The horse-eye jack usually has a yellow tail like the yellow jack but also has big eyes and a narrow, dark stripe* that runs from the tail about half way to the mouth.

The blue runner and the bar jack have no yellow color to their fins and have their own distinguishing characteristics. The blue runner has a dark tip on the tail lobes and two short, bright white horizontal lines, one above he base of the pectoral fin* and one at the base. The bar jack has a dark stripe along its dorsal fin and down to the lower lobe of its tail, accompanied by a bright blue or white line beneath it.

Although not a jack, the yellowtail snapper has a similar shape, light coloring, and a deeply forked tail that shows yellow. Unlike on the yellow jack, on the yellowtail snapper the yellow of the tail extends as a stripe towards the snout, turning darker towards the eye.

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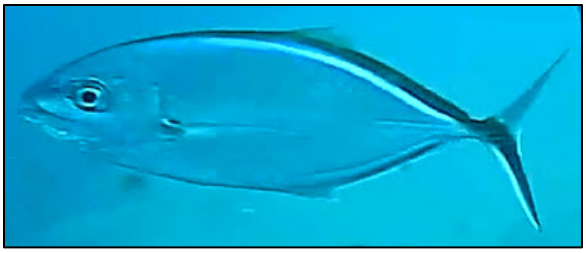
* Pectoral fin = side fin
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1)

Bar Jack

***Caranx ruber* (Bloch, 1793)**

Carangidae



Distinguishing characteristics:
A bar jack shares several characteristics with other members of the jack a deeply forked tail, rather pointed fins (including both lobes of tail), and a slender body cross section. The body color ranges from a silvery-gray to a silvery blue. From the side, the body is oval-shaped, with a dark stripe* that runs along the dorsal fin* to the lower lobe of the tail, A bright, light blue, almost white stripe runs beneath the black stripe. A white "mustache" shows above the mouth. When swimming, a bar jack wriggles much of its body, a motion that is unlike the other jacks. Bar jacks seen on SharkCam are typically juveniles and often travel in small schools.

Relative abundance: Frequent - seen often, not every visit
Relative size: Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: Blue Runner (*Caranx crysos*), Horse-eye Jack (*Caranx latus*), Yellow Jack (*Carangoides bartholomaei*), Yellowtail Snapper (*Ocyurus chrysurus*)

Several other jack species can be confused with the bar jack but lack the bar jack's bright blue and black stripes and have their own distinguishing features. The blue runner has a dark tip on the tail lobes and two short, bright white horizontal lines, one above the base of the pectoral fin* and one at the base. The horse-eye jack has very large eyes and usually has a bright yellow tail and a narrow, dark stripe that runs from the tail about half way to the mouth. The fins of the yellow jack have a yellow cast, especially the lower lobe of the tail. Although not a jack, the yellowtail snapper has a similar shape and light coloring but has a yellow tail and a yellow stripe that starts at the tail, becoming darker towards the eye.

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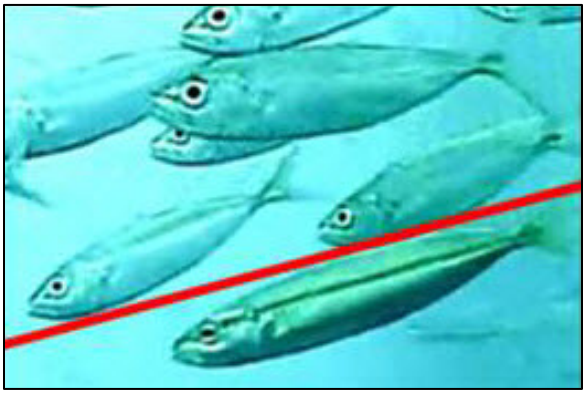
* Dorsal fin = top fin
Pectoral fin = side fin
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1)

Bigeye Scad

***Selar crumenophthalmus* (Bloch, 1793)**

Carangidae



Comparative view of bigeye scad (above), round scad (below)

Distinguishing characteristics:
Although small, generally 4 to 6 inches long, bigeye scad show several jack characteristics**:** silvery-gray coloration, deeply forked tail, rather pointed fins (including both lobes of tail), and a slender cross section. From the side it is shaped like an elongated oval and may show a small dark spot above the pectoral fin*. As its name implies, its eye is large, having a diameter as great as or greater than the distance between its eye and the end of its snout. Depending on lighting angles, the bigeye might show a metallic sheen. This is a schooling fish, often forming schools of thousands.

Relative size: Very small (<10 cm or 4 in) to Small (10–20 cm or 4–8 in)
Relative abundance: Occasional - seen infrequently, not every visit

Similar species: Round Scad (*Decapterus punctatus*), Vermilion Snapper (*Rhomboplites aurorubens*), young Tomtate (*Haemulon aurolineatum*)

The round scad has the same jack characteristics as the bigeye scad and a similar elongated oval but its body is more slender. The eye is smaller on the round scad, the diameter being less than the distance between its eye and the end of its snout.

A vermilion snapper also has a large eye but its tail is more square, with only a shallow fork, and the fish lacks a metallic sheen.

Often seen in and around schools of round scad, young tomtates have a dark blotch at the base of the tail, a feature the bigeye scad does not have.

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* Pectoral fin = side fin

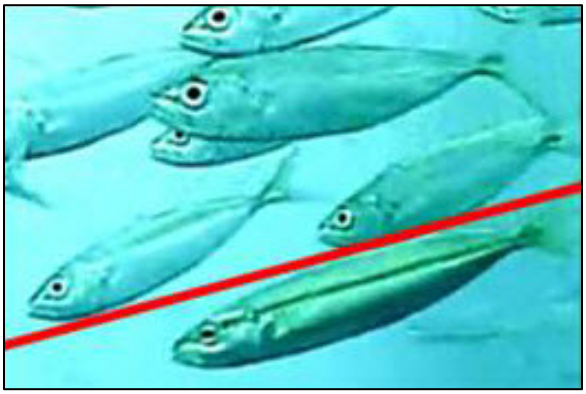
Additional information, web links, and contributions.

SharkCam video (1)

Round Scad

***Decapterus punctatus* (Cuvier, 1829)**

Carangidae



Comparative view of bigeye scad (above), round scad (below)

Distinguishing characteristics:
Although small, generally 6 to 8 inches long, a round scad shares several characteristics with other members of the jack silvery-gray coloration, deeply forked tail, rather pointed fins (including both lobes of tail), and a slender cross section. From the side it is shaped like a slender oval and shows a dark spot above the pectoral fin.* The diameter of its eye is less than the distance between its eye and the end of its snout. Occasionally it shows a yellow tail and a darkened stripe* mid-body. This is a schooling fish, often forming schools of thousands.

Relative abundance: Abundant - many seen every visit
Relative size: Small (10–20 cm or 4–8 in)

Similar species: Bigeye Scad (*Selar crumenophthalmus*), Yellowtail Snapper (*Ocyurus chrysurus*), young Tomtate (*Haemulon aurolineatum*)

The bigeye scad has the same jack characteristics as the round scad and the same general body shape but its body is deeper (proportionately taller). Its eye is larger, the diameter being equal to or greater than the distance between its eye and the end of its snout.

Although not a jack, the yellowtail snapper has a similar shape, light coloring, and a deeply forked tail that shows yellow. Unlike on the round scad, on the yellowtail snapper the yellow of the tail extends as a stripe towards the snout, getting darker towards the eye.

Often seen in and around schools of round scad, young tomtates have a dark blotch at the base of the tail, a feature the round scad does not have.

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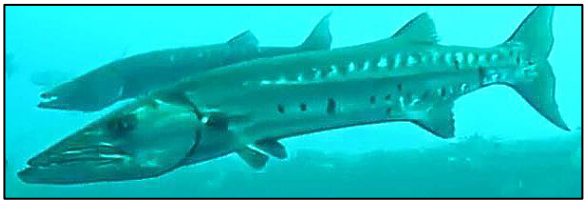
* Pectoral fin = side fin
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1)

Great Barracuda

***Sphyraena barracuda* (Edwards in Catesby, 1771)**
Sphyraenidae



Distinguishing characteristics:
The great barracuda is long and slender with a flattened head, a protruding lower lip, and a large, squared-off tail. Often only the second dorsal fin* shows, located far back on the body above the anal fin.* Individuals frequently hang motionless, or almost motionless, with the body tilted slightly lower at the head. The body may be all dark or silvery gray with a row of lighter-toned rectangular markings ("windows") and indistinct dark to black blotches along the midline.

Relative abundance: Abundant - many seen every visit (may be seasonal: seemingly absent from SharkCam winter of 2015-2016)
Relative size: Large (0.5–1 m or 20–39 in) to Very large (>1 m or >39 in)

Similar species: No other fish seen on SharkCam looks like a great barracuda.

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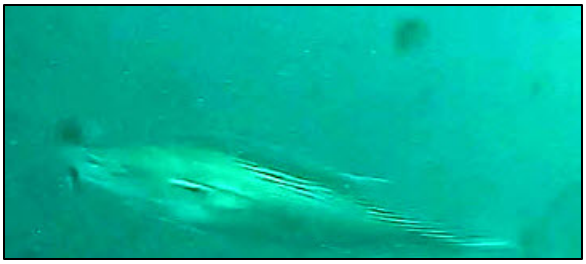
* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Additional information, web links, and contributions.
SharkCam video (1)

Atlantic Bonito

***Sarda sarda* (Bloch, 1793)**

Scombridae



Distinguishing characteristics:
Atlantic bonitos show up on SharkCam when large schools of small prey fish are present. The bonitos swim through the schools so fast that the camera can only catch blurry images of them. Generally, all that is seen is some portion of the narrow black lines on the upper half of the light colored body and a hint of the body shape and fins. The lines are straight and slope up from front to back, especially towards the tail. From the side the body is a streamlined oval, with the halves above and below the midline about the same height. The dorsal fin* is rather short at the leading edge and slopes down gradually to the even shorter trailing edge of the fin. The bonito seems to zoom straight past the camera, seldom making quick turns.

Relative abundance: Rare - few records
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Little Tunny (*Euthynnus alletteratus*)

Atlantic bonitos are often seen with little tunnies. The tunny is difficult to distinguish from the bonito on SharkCam. The tunny looks slightly deeper bodied, and its body lines are wavy and horizontal, as compared to the bonito's straight lines that slope up. The tunny's tall dorsal fin* shows a sharp curve down from the leading edge to the shorter rest of the fin, and the tunny noticeably erects its dorsal fin when making a quick turn at high speed. The bonito seldom makes quick turns at high speed and its dorsal fin is shorter and forms a more straight line from leading to trailing edges.

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* Dorsal fin = top fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Little Tunny

***Euthynnus alletteratus* (Rafinesque, 1810)**
Scombridae

Distinguishing characteristics:
Little tunnies show up on SharkCam when large schools of small prey fish are present. They swim through the schools so fast that the camera only catches blurry images of them. Generally, all that is seen is a hint of the body shape and fins. The body silhouette is distinctly shaped like an American football. If the fish is even with or below the camera, the viewer might see some portion of narrow black lines on the upper part of the light colored body. From the side, the body is a streamlined oval that is slightly taller from the midline down than from the midline up. The lines are wavy ("worm-like"). At the head end, the lines are short and many go in different directions. From mid-body to the tail, the lines form a horizontal pattern. The dorsal fin* is rather tall at the leading edge and curves down sharply to the shorter rest of the fin. The dorsal fin is visibly erect when the tunny makes a quick turn at high speed.

Note: Little tunny have several frequently used alternate common names, including false albacore, little tuna, bonita, and albie.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in) to Large (0.5–1 m or 20–39 in)

Similar species: Atlantic Bonito (*Sarda sarda*)

The Atlantic bonito is difficult to distinguish from the little tunny on SharkCam. The bonito looks slightly more streamlined (less deeply bodied), and the lines on its body are straight and slope up from head to tail, as compared to the tunny's wavy and horizontal lines. The bonito seldom makes quick turns at high speed, unlike the tunny. The bonito's dorsal fin is noticeably shorter than the tunny's and forms an almost straight line from the leading to the trailing edges, as compared to the sharp curve in the tunny's dorsal fin.

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* Dorsal fin = top fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Atlantic Spadefish

***Chaetodipterus faber* (Broussonet, 1782)**

Ephippidae

Distinguishing characteristics:
Atlantic spadefish have a unique shape among SharkCam fish. From the side, its outstretched dorsal and anal fins* give the fish an outline that is roughly triangular, like a spade with a rounded end. Body and fin coloration is gray to gray-green with dark borders on the fins and varying numbers of dark bars* on the body (the bars fade, one by one, with age).

Relative abundance: Common - seen most visits in small numbers
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Sheepshead (*Archosargus probatocephalus*)

The sheepshead has dark bars like the Atlantic spadefish usually does. However, the sheepshead outline is oval shaped, unlike the spadefish's triangular shape. Also unlike the spadefish, the sheepshead body is lighter colored, generally white or off-white, with a gray head.

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* Anal fin = bottom fin closest to tail
Bar = vertical marking
Dorsal fin = top fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Bermuda Chub

***Kyphosus sectatrix* (Linnaeus, 1758)**

Kyphosidae

Distinguishing characteristics:
From the side, the Bermuda chub's body is oval shaped, with the dorsal and anal fins* giving the fish a slightly egg-shaped outline. A short white "mustache" shows above the mouth. Color is highly variable**:** body and fins all light; body light and fins varying degrees of dark, and body and fins varying degrees of dark. Close up, narrow alternating dark and light stripes* can be seen on the body. When a Bermuda chub gets excited, it becomes dark with large, contrasting light spots (spotted phase).

Relative abundance: Abundant - many seen every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Spottail Pinfish (*Diplodus holbrookii*)

Bermuda chubs and spottail pinfish are often seen together. The spottail pinfish is also oval shaped with a shallowly forked tail but it has a dark band around the base of its tail and its body is always light colored. When seen together, the Bermuda chub's larger size is apparent. In silhouette, the Bermuda chub's slightly egg-shaped outline distinguishes it from the spottail pinfish.

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Stripes = horizontal markings
Additional information, web links, and contributions.
SharkCam video (1) (2)

Normal coloration and pattern (top image), spotted phase variation (middle image), frequently seen color variations (bottom image)

COLORFUL OVALS

Angelfishes–Pomacanthidae
- Blue Angelfish
- French Angelfish
- Queen Angelfish

Butterflyfishes–Chaetodontidae
- Spotfin Butterflyfish

Damselfishes–Pomacentridae
- Bicolor Damselfish
- Blue Chromis
- Cocoa Damselfish
- Purple Reeffish
- Sergeant Major

Surgeonfishes–Acanthuridae
- Blue Tang (juvenile)
- Doctorfish
- Surgeonfishes (Blue Tang (adult), Doctorfish, Ocean Surgeon)

Blue Angelfish

***Holacanthus bermudensis* Goode, 1876**

Pomacanthidae

Distinguishing characteristics:
From the side, a broad body and trailing tips of its dorsal and anal fins* give the blue angelfish a rectangular shape with a blunt face. The tail is rounded and the end has a light-colored band that is yellow in good light. Face-on, the fish has a roughly circular forehead blotch that is brighter blue than the surrounding area, and on the side of its face are several short, light blue lines arranged in a column. Body coloration ranges from deep blue to yellow-green. From far away, the broad body, the trailing fin tips, and the light-colored tail end make identification as a blue angelfish safe.

Relative abundance: Abundant - many seen every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Queen Angelfish (*Holacanthus ciliaris*), Hogfish (*Lachnolaimus maximus*)

The queen angelfish is nearly identical in shape to the blue angelfish but has a completely yellow tail and its bright blue forehead blotch has a darker center, making a ring (the crown). Hogfish also have similar silhouettes: broad bodies with trailing dorsal and anal fins that give the fish a roughly rectangular shape. Unlike the angelfish, the hogfish swims using primarily its pectoral fins* (angelfish use primarily their tails), has a large tail that has long tips, and has a pointed face.

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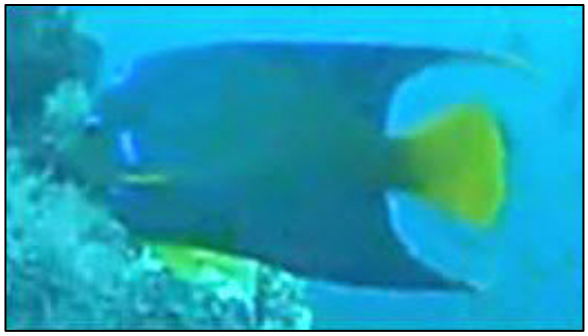
* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1)

Queen Angelfish

***Holacanthus ciliaris* (Linnaeus, 1758)**

Pomacanthidae



Distinguishing characteristics:
From the side, trailing tips of its dorsal and anal fins* give the queen angelfish a rectangular shape. The entire tail is light-colored (yellow in good light). Face-on, the fish has a roughly circular forehead blotch that is brighter blue than the surrounding area. The blotch has a darker center, making a ring (the queen's "crown"). From far away, the broad body, the trailing fin tips, and the light-colored tail make identification as a queen angelfish safe.

Relative abundance*:* Common - seen most visits in small numbers
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Blue Angelfish (*Holacanthus bermudensis*), Hogfish (*Lachnolaimus maximus*)

The blue angelfish is nearly identical in shape to the queen angelfish but only the rear edge of the tail is light colored (yellow) and its bright blue forehead blotch has no darker center (no "crown").

Hogfish and blue and queen angelfish have similar silhouettes; broad bodies with trailing dorsal and anal fins that give the fish a roughly rectangular shape. Unlike the angelfish, the hogfish swims using primarily its pectoral fins* (angelfish use primarily their tails) and has a large tail and a pointed face.

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

French Angelfish

***Pomacanthus paru* (Bloch, 1787)**

Pomacanthidae

Distinguishing characteristics:
From the side, the erect dorsal and anal fins* and their trailing tips give the French angelfish a spade shape (almost triangular). Except for its face, the scales on its body are dark with bright yellow edges, giving a speckled appearance. The face is dark with a yellow ring around the eye and white lips.

Relative abundance: Rare – few records
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Blue Angelfish (*Holacanthus bermudensis*), Queen Angelfish (*H. ciliaris*), Atlantic Spadefish (*Chaetodipterus faber*)

Blue angelfish and queen angelfish have shapes roughly like the French angelfish, but are typically more rectangular, and the French angelfish has no yellow on its tail. The Atlantic spadefish has a similar spade shape but is lighter colored with contrasting black bars and has no yellow coloration.

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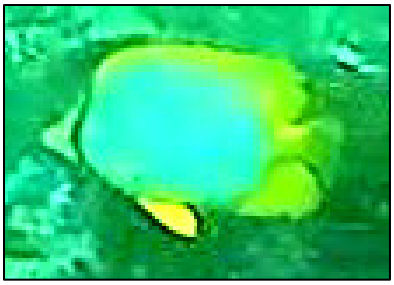
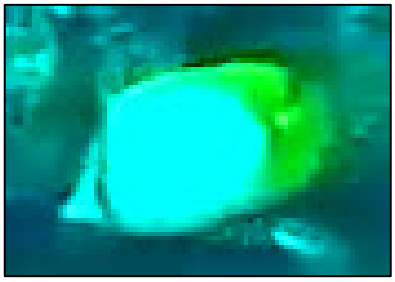
* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Additional information, web links, and contributions.
SharkCam video (1)

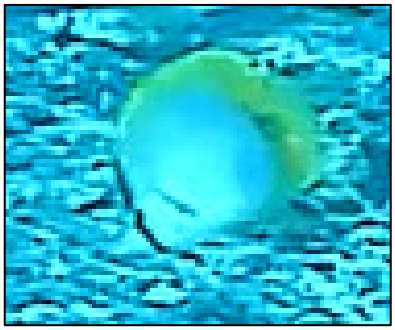
Spotfin Butterflyfish

***Chaetodon ocellatus* Bloch, 1787**

Chaetodontidae







Distinguishing characteristics:
From the side, spotfin butterflyfish have relatively round, white and yellow bodies, yellow fins, and a dark bar* that runs across the eye. The spot for which it is named is located at the trailing edge of its dorsal fin* but is small and is visible only very close to the camera.

Relative abundance: Rare - few records
Relative size: Small (10–20 cm or 4–8 in)

Similar species: No other fish seen on SharkCam resembles the spotfin butterflyfish.

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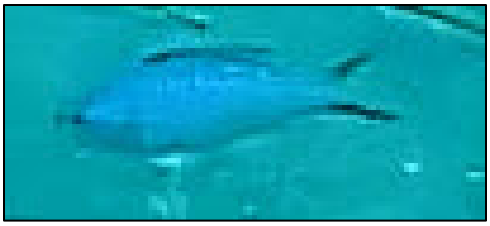
* Bar = vertical marking
Dorsal fin = top fin
Additional information, web links, and contributions.
SharkCam video (1)

Blue Chromis

***Chromis cyanea* (Poey, 1860)**

Pomacentridae



Distinguishing characteristics:
The blue chromis is brilliant blue with a deeply forked tail that has dark borders on the top and bottom. The body shape is a slender (elongated) oval. Like other damselfish, the blue chromis is a very active swimmer, constantly darting about.

Relative abundance: Rare - few records
Relative size: Very small (<10 cm or 4 in)

Similar species: Juvenile Purple Reeffish (*Chromis scotti*)

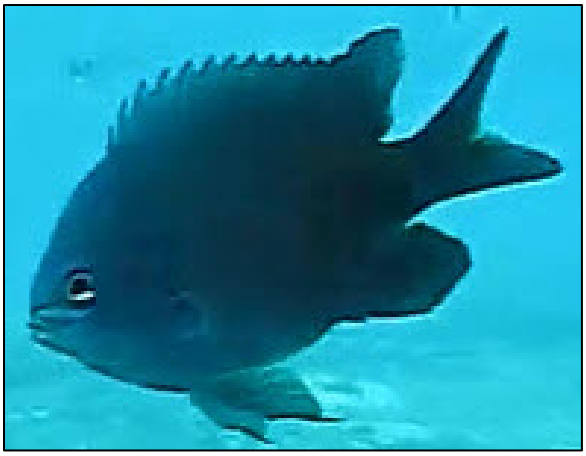
Juvenile purple reeffish are difficult to distinguish from blue chromis. Both are brilliant blue. The blue chromis has dark borders on its tail edges. The juvenile purple reeffish can have dark edges on its tail, although sometimes this can be difficult to see. The main distinguishing characteristic is the tail shape; the blue chromis tail is deeply forked, while the purple reeffish tail is only shallowly forked. The absence of dark tail edges, or the presence of a shallowly forked tail, signifies a juvenile purple reeffish. As they grow, the juvenile purple reeffish becomes deeper bodied than the blue chromis, more round than oval, and eventually they darken like adult purple reeffish.

Additional information, web links, and contributions.

Purple Reeffish

***Chromis scotti*, Emery, 1968**

Pomacentridae



Distinguishing characteristics:
SharkCam adult purple reeffish is a deep purple, almost black colored fish with an oval shape and a forked tail with rounded lobes. The chin and throat areas are a lighter color and a light blue line above the mouth forms a "mustache." The fish swims using primarily its pectoral fins* with little or no tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. The fish feed in loose aggregations in the water column, seemingly in constant motion, darting about like other members of the damselfish family. The juvenile purple reeffish are much more brilliantly colored bluish-purple fish that stay close to the bottom and show the same seemingly constant, quick motion as the adults.

Adult phase (top image), juvenile color and markings (bottom image)

Relative abundance: Adults not seen in 2015, seen frequently in 2016 (seen often, not every visit). Juveniles seen frequently in 2015 (seen often, not every visit), not seen in 2016
Relative size: Very small (<10 cm or 4 in)

Similar species: Cocoa Damselfish (*Stegastes variabilis*), adult Blue Tang (*Acanthurus coeruleus*), Blue Chromis (*Chromis cyanea*)

The cocoa damselfish is another almost black colored fish having a forked tail with rounded lobes. Like the purple reeffish and other damselfishes, the cocoa damselfish seems to be in constant motion. However, unlike the purple reeffish's oval shape, the cocoa damselfish's large dorsal and anal fins* give it a slightly rectangular shape. Other differences are the cocoa damselfish's use of its tail fin while swimming, and feeding primarily on algae-bearing substrates (i.e., not in the water column). Finally, under good lighting conditions, the cocoa damselfish coloration shows as a deep brown with yellow pectoral fins and a yellow wash in the chest area.

Blue chromis are difficult to distinguish from juvenile purple reeffish. Both are brilliant blue. The blue chromis has dark borders on its tail edges. The juvenile purple reeffish can have dark edges on its tail, although sometimes this can be difficult to see. The main distinguishing characteristic is the tail shape; the blue chromis tail is deeply forked, while the purple reeffish tail is only shallowly forked. The absence of dark tail edges, or the presence of a shallowly forked tail, signifies a juvenile purple reeffish. As they grow, the juvenile purple reeffish becomes deeper bodied than the blue chromis, more round than oval, and eventually they darken like adult purple reeffish.

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* Pectoral fins = side fins
Additional information, web links, and contributions.
SharkCam video (1) (2)

Bicolor Damselfish

***Stegastes partitus* (Poey, 1868)**

Pomacentridae

Distinguishing characteristics:
From the side, dorsal and anal fins* give the bicolor damselfish a somewhat rectangular shape. On SharkCam, the front half of juveniles is dark and the rear half is white. SharkCam adults also show the bi-coloration but the tones are more washed out than on juveniles, the front less dark and the rear not as white. Both age groups spend most of their time at the bottom. Like other damselfish, bicolor damselfish seem to be constantly moving and are aggressive about chasing even larger fish away from a favorite grazing area.

Note: Most damselfish species are very similar in silhouette, with a rounded body profile and often dark coloration in shades of brown, black, yellow, blue, or some combination.

Relative abundance: Frequent - seen often, not every visit
Relative size: Very small (<10 cm or 4 in)

Similar species: Cocoa Damselfish (*Stegastes variabilis*)

Cocoa and bicolor damselfish have similar shapes, are similarly sized, and both spend much of their time at the bottom. On SharkCam, the two species often interact with one another, chasing each other. Cocoa damselfish tend to be slightly larger and, so, tend to be the ones doing the chasing most often. Cocoa damselfish are more uniformly dark colored than bicolor damselfish, with some yellow showing in the chest area and on the pectoral fins.*

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2) (3)

Cocoa Damselfish

***Stegastes variabilis* (Castelnau, 1855)**

Pomacentridae

Distinguishing characteristics:
From the side, dorsal and anal fins* give the cocoa damselfish a somewhat rectangular shape. At a distance, the fish looks dark with a hint of yellow towards the lower front. When closer, more yellow is visible together with narrow dark bars.* The pectoral fins* are yellow. Like other damselfish, cocoas seem to be constantly moving and are aggressive about chasing even larger fish away from a favorite grazing area.

Note: Most damselfish species are very similar in silhouette, with a rounded body profile and often dark coloration in shades of brown, black, yellow, blue, or some combination.

Relative abundance: Occasional - seen infrequently, not every visit. With one exception; one individual has established a territory within the camera base and is seen frequently, although often only the tail shows.
Relative size: Very small (<10 cm or 4 in)

Similar species: Bicolor Damselfish (*Stegastes partitus*), Blue Angelfish (*Holacanthus bermudensis*), Queen Angelfish (*H. ciliaris*). Several other species of benthic (bottom-dwelling) damselfishes are very common at Frying Pan Tower, as seen by divers. They may be seen in numbers at a distance too great to allow positive identification on SharkCam. These common but currently unconfirmed species include the bicolor damselfish (*Stegastes partitus*) and the beaugregory (*S. leucostictus*).

Cocoa and bicolor damselfish have similar shapes, are similarly sized, and both spend much of their time at the bottom. On SharkCam, the two species often interact with one another, chasing each other. Cocoa damselfish tend to be slightly larger and, so, tend to be the ones doing the chasing most often. Cocoa damselfish are more uniformly dark colored than bicolor damselfish, with some yellow showing in the chest area and on the pectoral fins.*

Although they are clearly different in size and silhouette, blue and queen angelfish often graze above the camera. As a result, as with the cocoa damselfish, fleeting glimpses of their tails and trailing parts of their dorsal and anal fins are often all that are visible. Yellow on the tail and tips of the dorsal and anal fins means the fish is an angelfish.

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* Anal fin = bottom fin closest to tail
Bar = vertical marking
Dorsal fin = top fin
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Sergeant Major

***Abudefduf saxatilis* (Linnaeus, 1758)**

Pomacentridae

Distinguishing characteristics:
From the side, a sergeant major is oval shaped. It has a gray head, a lighter colored body that almost always has a yellow cast, and five dark bars.* The highest part of its back is roughly above the center of the fish's body, behind its pectoral fin.* Like other damselfish, sergeant majors seem to be constantly moving quickly, always busy.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Very small (<10 cm or 4 in)

Similar species: Sheepshead (*Archosargus probatocephalus*), juvenile Banded Rudderfish (*Seriola zonata*), Atlantic Spadefish (*Chaetodipterus faber*)

A sheepshead also has a gray head, a lighter colored body, and dark bars. However, it never looks yellow, it usually has six or seven bars, the high point of its back is roughly over its pectoral fin,* and it acts more sedate than the busy sergeant major.

A juvenile banded rudderfish also has dark bars on a lighter colored body but the body is more elongated (not as deep) and does not have a darker head. Unlike the sergeant major, it has a dark bar, called a nuchal mark, which runs from the mouth, across the eye, to the front of the dorsal fin.

An Atlantic spadefish has dark bars on a lighter colored body but has an unmistakable triangular shape.

Individuals of these similar species will always be substantially larger than a sergeant major.

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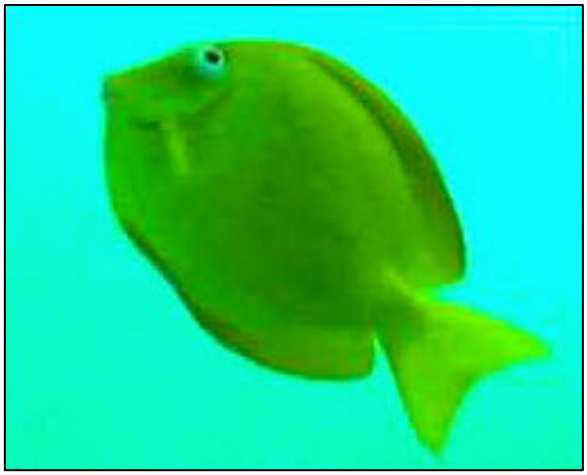
* Bar = vertical marking
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1)

Blue Tang (juvenile)

***Acanthurus coeruleus* Bloch and Schneider, 1801**
Acanthuridae



Distinguishing characteristics:
The blue tang swims using primarily its pectoral fins,* with little or no tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. From the side, its body is oval shaped, almost round, with a small, protruding snout and mouth. The juvenile blue tang is all yellow. As it transitions to an adult it can be a mixture of yellow and darker colors, with the tail the last to darken. Young juveniles stay close to the bottom and are visible as small, yellow, darting spots. As they get bigger (and braver), they venture higher up the water column to SharkCam level.

There have been no confirmed sightings of adult blue tangs on SharkCam. An adult blue tang can vary its fin and body color tone from a light, almost white, powder blue, through various darker shades of blue, to black, with or without blue highlights. It can have a light colored band around the base of the tail of an otherwise dark body. Depending on proximity to the camera and lighting, the adult blue tang shows a single, short, light colored line on the side of the base of its tail. The mark is a spur, and is the only failsafe way to identify a blue tang on SharkCam. Occasionally on SharkCam, oval-shaped black fish are seen swimming using primarily their pectoral fins, usually in small groups of 3–6. Some of these might be adult blue tangs but identification as such has not been possible because no light colored spur has been visible and because other members of the family (surgeonfishes) are similarly shaped, exhibit the same swimming style, and can be darkly colored.

Relative abundance: Juveniles frequent - seen often, not every visit
Relative size: Juvenile - Very small (<10 cm or 4 in) to Small (10–20 cm or 4–8 in). Adult - Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: Doctorfish (*Acanthurus chirurgus*), Ocean Surgeon (*A. tractus*), see Surgeonfishes (*Acanthurus* spp.)

Because of its bright yellow color and round body, no other fish seen on SharkCam resembles a juvenile blue tang. See the Surgeonfishes profile for discussion of similarities between the adult blue tang, doctorfish, and ocean surgeon.

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* Pectoral fin = side fin
Additional information, web links, and contributions.

Doctorfish

***Acanthurus chirurgus* (Bloch, 1787)**
Acanthuridae

Distinguishing characteristics:
The doctorfish swims using primarily its pectoral fins,* with little or no tail movement. From the side, its body is oval shaped, almost egg shaped. It has 10 to 12 dark bars* on its side, and can have two, short, light colored lines, separated by a dark line (a spur), on the side of the base of its tail. On SharkCam, doctorfish have shown dark brown bodies, the two light colored lines, and, in good lighting, darker brown bars and blue highlights in the fins and tail.

Relative abundance: Rare - few records
Relative size: Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: Adult Blue Tang (*Acanthurus coeruleus*), Ocean Surgeon (*A. tractus*), see Surgeonfishes (*Acanthurus* spp.)

See the Surgeonfishes profile for discussion of similarities between the adult blue tang, doctorfish, and ocean surgeon.

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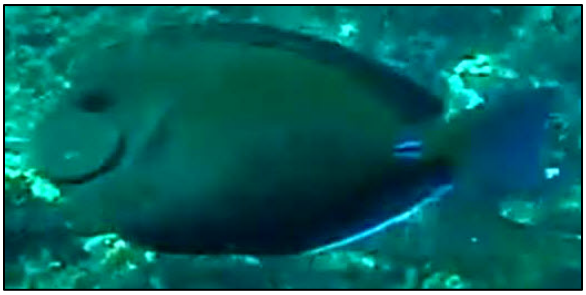
* Bar = vertical marking
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1)

Surgeonfishes (Blue Tang (adult), Doctorfish, Ocean Surgeon)

***Acanthurus coeruleus* Bloch and Schneider, 1801, *Acanthurus chirurgus* (Bloch, 1787), *Acanthurus tractus* Poey, 1860**

Acanthuridae



Distinguishing characteristics:
Occasionally on SharkCam, oval-shaped dark fish are seen, usually in small groups of 3 – 6. Coloration is typically dark, with or without a tinge of deep blue, or a dark brown. They swim using primarily their pectoral fins.* Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. The fish are probably adult blue tang, doctorfish, or ocean surgeons, and are collectively referred to as surgeonfish. The three species are difficult to distinguish when dark colored and complicate identification by frequently schooling together.

Each species has a small (0.5 in or 1 cm), sharp spine, called a spur, on each side of its tail that it can erect like a thorn as a defense mechanism. The spur color is a distinguishing characteristic. The spur on a blue tang shows as a short white or yellow-white horizontal line on the base of the tail and is the key distinguishing characteristic for the adult of the species (see separate species entry for blue tang regarding juveniles). There have been no confirmed sightings of adult blue tangs on SharkCam.

Spurs on the doctorfish and ocean surgeon are dark colored and can have short white lines above and below the spurs. Doctorfish are distinguished from ocean surgeonfish by their 10 – 12 dark bars* on their sides (see separate species profile for doctorfish). Because dark bars are difficult to see on a dark body, an inability to see bars cannot be a safe distinguishing characteristic. An apparent absence of the bars can mean the fish is an ocean surgeonfish or is a doctorfish but the bars cannot be seen. There is no way to definitively identify an ocean surgeon on SharkCam.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: Adult Blue Tang (*Acanthurus coeruleus*), Doctorfish (*A. chirurgus*), Ocean Surgeon (*A. tractus*)

See species descriptions and Distinguishing Characteristics above. No other fish seen on SharkCam have dark, oval-shaped bodies and swim using primarily their pectoral fins.

Note: Reference books and online resources have historically used the scientific name *Acanthurus bahianus* for the entire geographic range of the ocean surgeon. It was recently proposed that the northwestern Atlantic *A. bahianus* is actually *A. tractus*, and that *A. bahianus* be reserved for the Brazilian populations of the ocean surgeon. See Additional Information for more detail.

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* Bar = vertical marking
Pectoral fin = side fin

Additional information, web links, and contributions.
SharkCam video (1)

SWIM WITH PECTORAL FINS/OBVIOUS SCALES

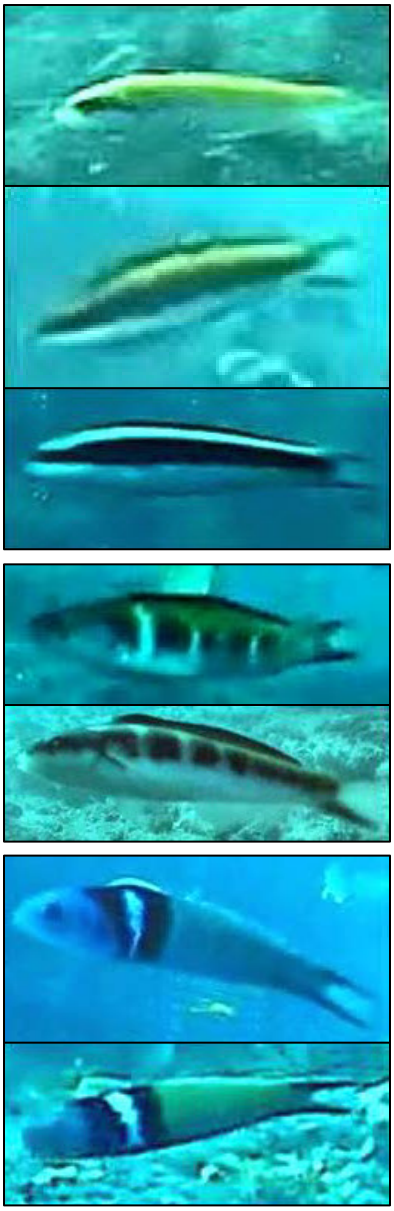
Wrasses–Labridae
- Bluehead
- Clown Wrasse
- Puddingwife
- Slippery Dick
- Spanish Hogfish
- Spotfin Hogfish
- Yellowhead Wrasse

Parrotfishes–Scaridae
- Redband Parrotfish
- Stoplight Parrotfish
- Yellowtail Parrotfish

Bluehead

***Thalassoma bifasciatum* (Bloch, 1791)**

Labridae



Initial phase (top three images), intermediate stage (middle two), terminal phase (bottom two images)

Distinguishing characteristics:

Blueheads, like all wrasses, swim using primarily their pectoral fins* with little or no tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. Their tails are kept closed except when needed for a burst of speed. Like other wrasses, blueheads are small and slender, and change color patterns as they go through juvenile, initial, and terminal maturation phases. Blueheads in the same phase can exhibit different color variations, and intermediate stages between phases can greatly alter their appearance. Juvenile and initial phase blueheads cannot be distinguished from one another and are discussed below as all initial phase.

Initial phase –SharkCam initial phase blueheads show three color variations, all with a white body. The "all-yellow variation" has a yellow head and back and black around the eye. The "mid-body-stripe variation with yellow back" looks like the "all-yellow variation" but with a dark stripe* on the side. The "mid-body-stripe variation with white back" shows no yellow, just a wide dark stripe. The last variation is the most common bluehead seen on SharkCam.

Intermediate stage – As SharkCam initial phase blueheads transition to a terminal phase, they develop a series of alternating light and dark bars.* The light-colored bars are white or greenish yellow; the dark-colored bars are black and may include lighter coloration above and below. On some individuals, the black obscures most of the light coloration. The top and bottom edges of the tail are dark colored.

Terminal phase – The terminal phase bluehead has a blue head and a rear body that is blue, green, or blue-green. The head and rear body are separated by two dark bars, which are separated by a white bar. The top and bottom edges of the tail are dark colored.

Relative abundance:

Initial phase all-yellow variation**:** Rare - few records

Initial phase mid-body-stripe variation with yellow back**:** Occasional - seen infrequently, not every visit

Initial phase mid-body-stripe variation with white back**:** Common - seen most visits in small numbers

Intermediate stages**:** Frequent - seen often, not every visit

Terminal phase**:** Occasional - seen infrequently, not every visit

Relative size: Very small (<10 cm or 4 in) to Small (10–20 cm or 4–8 in)

Similar species: Initial phase Puddingwife (*Halichoeres radiatus*), initial phase Slippery Dick (*H. bivittatus*)

White bars on an initial phase puddingwife and light-colored bars on an intermediate stage bluehead make the fish resemble one another. However, the puddingwife has black between only three white bars, while the bluehead has black between all its light-colored bars. In addition, the puddingwife is deeper bodied (taller) than the slender bluehead. SharkCam initial phase slippery dick also has white bars like the intermediate stage bluehead but the bars are more numerous than those on the bluehead, about 10 versus about 5.

* Bar = vertical marking
Pectoral fin = side fin

Stripe = horizontal marking
Additional information

SharkCam video (1) (2)

Clown Wrasse

***Halichoeres maculipinna* (Müller and Troschel in Schomburgk, 1848)**
Labridae

Initial phase (top image), terminal phase variations (bottom two images)

Distinguishing characteristics:
Wrasses swim using primarily their pectoral fins,* with little or no tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. Clown wrasses seem to swim constantly, always going somewhere. Their bodies are small, two to four inches long, and slender as seen from the side. Like other wrasses, clown wrasses change color patterns as they go through juvenile, initial, and terminal maturation phases. The juvenile phase has not been seen on SharkCam.

Initial phase – A SharkCam initial phase clown wrasse is a moderate-toned green above and white below, with no dark spot on its side.

Terminal phase – SharkCam terminal phase clown wrasses are seen in two color variations, both having a black spot on the side. The typical variation looks like the initial phase (green above, white below) but with the spot and a yellow chin. The other variation, called "nuptial colors," has a white back, a moderate-toned stripe, a white underside, and the spot.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Small (10–20 cm or 4–8 in)

Similar species: Bluehead (*Thalassoma bifasciatum*), Puddingwife (*Halichoeres radiatus*), Slippery Dick (*H. bivittatus*)

Other SharkCam small wrasses have slender bodies and swimming styles like the clown wrasse: bluehead, puddingwife, slippery dick, and yellowhead. In silhouette, these fish can be difficult to distinguish from the clown wrasse. With good lighting, the dark spot on the side of the terminal phase clown wrasse distinguishes it from the other species. Light colored bars on the initial phase slippery dick distinguish it from the clown wrasse. With good lighting, the dark spot on the side of the terminal phase clown wrasse distinguishes it from the other species.

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* Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Puddingwife

***Halichoeres radiatus* (Linnaeus, 1758)**

Labridae

Initial phase variations

Distinguishing characteristics:
The puddingwife, like all wrasses, swims using primarily its pectoral fins* with little or no tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. Also like other wrasses, it changes color patterns as it goes through juvenile, initial, and terminal maturation phases. The only puddingwife seen on SharkCam have been initial phases. From the side the fish had a slender oval shape with five white bars* across the back and black areas between three of the bars.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Small (10–20 cm or 4–8 in)

Similar species: Bluehead (*Thalassoma bifasciatum*)

Light-colored bars on an intermediate stage bluehead and white bars on an initial stage puddingwife make the fish resemble one another. However, the bluehead has black between all its light-colored bars, while the puddingwife has black between only three of its white bars. In addition, the bluehead is more slender than the oval-shaped puddingwife.

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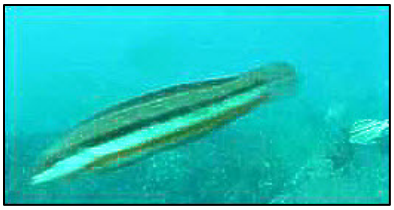
* Bar = vertical marking
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Slippery Dick

***Halichoeres bivittatus* (Bloch, 1791)**

Labridae



Initial phase variations

Distinguishing characteristics:
Slippery dicks, like all wrasses, swim using primarily their pectoral fins* with little or no tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. Slippery dicks seem to swim constantly, always going somewhere. Their bodies are small and, from the side, slender. Like other wrasses, slippery dicks change color patterns as they go through juvenile, initial, and terminal maturation phases. SharkCam juvenile and initial phases have two dark stripes* separated by a white stripe. The initial phase also has numerous (10 or so) white bars.* The terminal phase has not been seen on SharkCam.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Small (10–20 cm or 4–8 in)

Similar species: Bluehead (*Thalassoma bifasciatum*), Puddingwife (*Halichoeres radiatus*)

Other slim-bodied wrasses may be easily mistaken for the slippery dick. The light-colored bars on an intermediate stage bluehead and the white bars on an initial phase puddingwife resemble the white bars on the initial phase slippery dick. In addition, the dark bars on the bluehead can resemble the dark stripes on the slippery dick. However, the slippery dick has many more white bars than the other 2 fish, 10 compared to 5 or so.

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* Bar = vertical marking
Pectoral fin = side fin
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1) (2)

Yellowhead Wrasse

***Halichoeres garnoti* (Valenciennes in Cuvier and Valenciennes, 1839)**
Labridae

Distinguishing characteristics:
Wrasses swim using primarily their pectoral fins,* with little or no tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. Yellowhead wrasses seem to swim constantly, always going somewhere. Seen from the side, their bodies are slender. Like other wrasses, the yellowhead changes color patterns as it goes through juvenile, initial, and terminal maturation phases. Only the terminal phase has been seen on SharkCam. True to its name, the terminal phase yellowhead has a yellow head. The rest of its body is white, partially framed by a black bar against the yellow, a black back, and a black tail.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Small (10–20 cm or 4–8 in)

Similar species: No other fish seen on SharkCam resembles the adult yellowhead wrasse.

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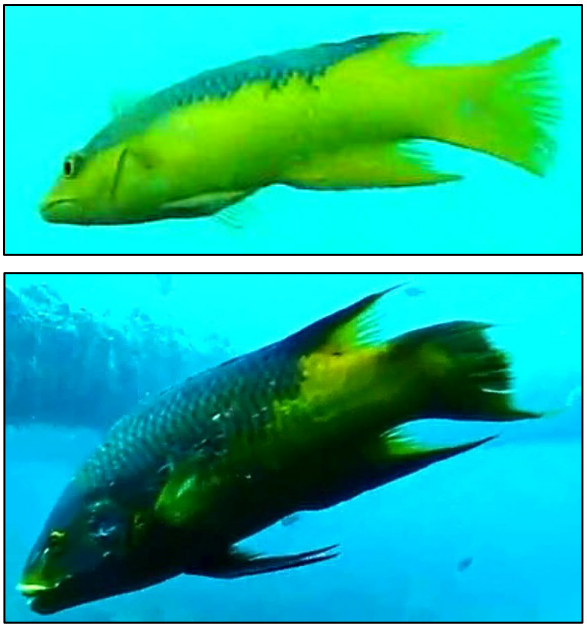
* Bar = vertical marking
Pectoral fin = side fin
Additional information, web links, and contributions.

Spanish Hogfish

***Bodianus rufus* (Linnaeus, 1758)**

Labridae



Juvenile (above) and adult (below) coloration of the Spanish hogfish. Larger individuals generally have less yellow.

Distinguishing characteristics:
Spanish hogfish, like all wrasses, swim using primarily their pectoral fins* with little or no tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. Spanish hogfish change patterns as they go through juvenile, initial, and terminal maturation phases. They start with a bright yellow body except for a dark "cape" covering their upper body from the nose almost to the end of the dorsal fin. As they age, the yellow coloration gives way to dark gray, until the mature terminal phase is almost all dark with little yellow remaining. The body shape remains generally the same as they age, with a pointed snout and long tips of the dorsal and anal fins* that give the fish an almost rectangular shape.

A search of reference books or the web will produce images of Spanish hogfish that show varying amounts of purple or pink coloration. These are pictures taken above the surface of the water, or in water less than 15 feet deep (about 4.5 meters), or in deeper water using artificial lighting, or are an artist's rendering using such images. Water at the depth of SharkCam, about 50 feet (about 15 meters) screens out all of the red and much of the orange portion of sunlight, leaving whatever colors the rest of the spectrum shows. This is why Spanish hogfish do not show any purple or pink coloration on SharkCam.

Note: Very small individuals may be seen engaging in cleaning behavior with larger, often predatory, fishes.

Relative abundance: Abundant - many seen every visit
Relative size: Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: Spotfin Hogfish (*Bodianus pulchellus*)

The spotfin hogfish and the Spanish hogfish have the same body shape and similar combinations of dark and yellow coloration. Only the spotfin shows white as a stripe* from the chin towards the tail.

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Pectoral fin = side fin
Stripe = horizontal marking
Additional information, web links, and contributions.

Spotfin Hogfish

***Bodianus pulchellus* (Poey, 1860)**

Labridae

Distinguishing characteristics:
Spotfin hogfish, like all wrasses, swim using primarily their pectoral fins* with little or no tail movement. They have a pointed snout and long tips on the dorsal and anal fins* that give the fish an almost rectangular shape. Also like other wrasses, spotfins change color patterns as they go through juvenile, initial, and terminal maturation phases. Only the terminal phase has been seen on SharkCam.

The terminal phase spotfin hogfish seen on SharkCam has a dark body with a white stripe* that starts wide at the chin and narrows towards the tail. The end of the dorsal fin, upper part of the tail base, and the tail are bright yellow. The fish may have a white stripe that runs from the mouth, up the nape, and across the back.

A search of reference books or the web will produce images of spotfin hogfish that show the body being bright red instead of dark These are pictures taken above the surface of the water, or in water less than 15 feet deep (4.5 meters), or in deeper water using artificial lighting, or are an artist's rendering using such images. Water at the depth of SharkCam, about 50 feet (about 15 meters), screens out all of the red and much of the orange portion of sunlight, leaving whatever colors the rest of the spectrum shows. This is why spotfin hogfish bodies look dark and not red on SharkCam.

Relative abundance: Rare - few records
Relative size: Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: Spanish Hogfish (*Bodianus rufus*)

The Spanish hogfish and the spotfin hogfish have the same body shape and similar combinations of dark and yellow coloration. The Spanish hogfish shows no white, as the spotfin does in its stripe from the chin towards the tail.

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Pectoral fin = side fin
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1) (2)

Redband Parrotfish

***Sparisoma aurofrenatum* (Valenciennes in Cuvier and Valenciennes, 1840)**
Scaridae

Initial phase variations (top two images), terminal phase variations (bottom two images)

Distinguishing characteristics:
Parrotfish swim primarily using their pectoral fins* with little tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. From the side they are oval shaped. Parrotfish change color patterns as they go through juvenile, initial, and terminal maturation phases.

There has been no confirmed sighting of a juvenile-phase redband parrotfish on SharkCam.

Initial phase redband parrotfish on SharkCam show two basic color and marking variations. The first variation is dark with two white stripes* running the length of the body. The second variation looks mottled with dark and lighter tones of gray-green and no white stripes. As the fish transition from one variation to the other, various combinations of stripe intensity, length, and number occur. Regardless of the variation or transition, the white saddle is always visible and the lighter colored anal fin* always shows dark spots.

Terminal phase redbands on SharkCam show little color or marking variation. They generally appear gray above the midline and white below and around the base of the tail, masking the saddle. The tail is white with dark borders on the top, bottom, and end. There is some variability in the amount of gray the terminal phase shows underneath but at a minimum a wide band of white shows on the side. If the gray goes up the base of the tail, the white saddle will remain visible.

Relative abundance: Frequent - seen often, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Stoplight Parrotfish (*Sparisoma viride*), Yellowtail Parrotfish (*Sparisoma rubripinne*)

The yellowtail parrotfish is the only other species on SharkCam that shows a white saddle across the base of its tail. As its name implies, this species has a yellow tail, a feature redbands do not have. The stoplight parrotfish has a similar swimming style and silhouette but, unlike the redband parrotfish, has a white bar* across the middle of its tail and three roughly horizontal rows of white spots on its body.

No other species seen on SharkCam shows gray above and white below and on the tail as the terminal phase redband does.

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* Anal fin = bottom fin closest to tail
Bar = vertical marking
Pectoral fin = side fin
Stripe = horizontal marking

Additional information, web links, and contributions.
SharkCam video (1) (2) (3) (4)

Stoplight Parrotfish

***Sparisoma viride* (Bonnaterre, 1788)**

Scaridae

Distinguishing characteristics:
Parrotfish swim primarily using their pectoral fins* with little tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. They are oval shaped from the side and change color patterns as they go through juvenile, initial, and terminal maturation phases.

Initial phase variations

On SharkCam, there has been no confirmed sighting of a juvenile- or terminal-phase stoplight parrotfish. SharkCam initial phase stoplight parrotfish is dark with a white bar* across the middle of its tail and three roughly horizontal rows of white spots on its body. The spots are similar in size to the large scales of the parrotfish. Depending on proximity and lighting, additional white spots may also show.

A search of reference books or the web will produce images of initial phase stoplight parrotfish that show varying amounts of red coloration. These are images made above the surface of the water, or in water less than 15 feet deep (4.5 meters), or in deeper water using artificial lighting, or are an artist's rendering using such images. Water at the depth of SharkCam, about 50 feet (about 15 meters) screens out all of the red and much of the orange portions of sunlight, leaving whatever colors the rest of the spectrum shows. This is why initial phase stoplight parrotfish show no red on SharkCam.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Redband Parrotfish (*Sparisoma aurofrenatum*), Yellowtail Parrotfish (*S. rubripinne*)

Other parrotfish seen on SharkCam, redband parrotfish and yellowtail parrotfish, have a similar swimming style and body silhouette as the stoplight parrotfish but no other species seen on SharkCam has a white bar across the middle of its tail like the stoplight parrotfish.

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* Bar = vertical marking
Pectoral fin = side fin
Additional information, web links, and contributions.

Yellowtail Parrotfish

***Sparisoma rubripinne* (Valenciennes in Cuvier and Valenciennes, 1840)**
Scaridae

Distinguishing characteristics:
Parrotfish swim primarily using their pectoral fins* with little tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. They are oval shaped from the side and change color patterns as they go through juvenile, initial, and terminal maturation phases. On SharkCam, there has been no confirmed sighting of a juvenile- or terminal-phase yellowtail parrotfish.

Initial phase variations

SharkCam initial phase yellowtail parrotfish is gray with a squared off yellow tail. There is a white marking, called a "saddle," across the top of the base of the tail (the white saddle does not encircle the tail base), and there are three or four white spots along the top of the body, next to the dorsal fin.* Close up, the large scales on the side show rows of alternating dark and light gray tones. Occasionally, a yellowtail shows a white stripe on its side.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: Redband Parrotfish (*Sparisoma aurofrenatum*)

The redband parrotfish is the only other SharkCam species that shows a white saddle across the base of its tail. The redband does not have a yellow tail. Other SharkCam species have yellow tails but do not swim like a parrotfish.

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* Dorsal fin = top fin
Pectoral fin = side fin
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1) (2)

HEAVY BODIES/LARGE LIPS

Sea Basses and Groupers–Serranidae
- Black Sea Bass
- Gag
- Goliath Grouper
- Scamp
- Whitespotted Soapfish

Wrasses–Labridae
- Hogfish
- Tautog

Cobia–Rachycentridae
- Cobia

Black Sea Bass

***Centropristis striata* (Linnaeus, 1758)**

Serranidae

Adult form showing slight nuchal lump (top image), juvenile or female showing light saddles (bottom image)

Distinguishing characteristics:
Black sea basses swim primarily using their large pectoral fins* with little or no tail movement. From the side, they are oval-shaped and mostly black. Their tails have white borders on the top and bottom and are rounded except for large individuals that start to develop caudal fin* extensions from the tips and center, giving the appearance of a three-lobed, or scalloped tail. They tend to swim with their tails relaxed, closed, and with a humped-back profile. Their dorsal fins have white tips. In the right lighting and proximity to the camera, they show narrow white stripes* that run from the head to the tail. Juveniles and smaller females may appear more dark brown than black and often have indistinct lighter saddles* across the dorsal surface. Close up, their bulging eyes are apparent.

The lips and especially the protruding lower jaw are prominent, a similarity with other members of family Serranidae, the groupers and sea basses. Adult males will often have a lighter gray head and, during breeding season, a noticeable forehead bump called a nuchal lump.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Tautog (*Tautoga onitis*)

The tautog shares several characteristics with the black sea bass**:** swimming style, gray, brown or black body, and white highlights on the long dorsal fin and tail. The tautog is typically longer and stockier than the black sea bass and has prominent lightly colored lips and chin. The tautog does not have white stripes like the black sea bass.

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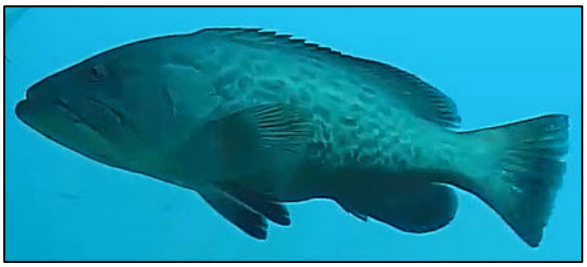
* Pectoral fin = side fin
Dorsal fin = top fin
Caudal fin = tail fin
Saddle = vertical marking that spans the back but not the entire side
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1) (2)

Gag

***Mycteroperca microlepis* (Goode and Bean, 1879)**
Serranidae



Distinguishing characteristics:
From the side the gag has the typical grouper body shaped like an elongated oval with a protruding lower lip. The body has many dark markings that form no pattern and are often called "wormy." The markings are difficult to see if the fish is dark colored or in silhouette. The tail is squared off or slightly convex, and the pectoral and anal fins* are rounded. Close up, short dark lines can be seen radiating from the eye. This is the grouper seen most frequently on SharkCam.

Note: Color and pattern differences in gag are related to social behaviors. See the Additional Information entry for further explanation.

Relative abundance: Frequent - seen often, not every visit
Relative size: Large (0.5–1 m or 20–39 in)

Similar species: Goliath Grouper (*Epinephelus itajara*), Scamp (*Mycteroperca phenax*), Cubera Snapper (*Lutjanus cyanopterus*)

The goliath grouper and scamp have similar body shapes and protruding bottom lips as the gag. The goliath grouper tail is rounded, while the gag tail is squared off or only slightly convex.

The adult scamp's tail has elongated tips, called exserts, unlike the gag's. The rear edge of the scamp anal fin* is straight with an elongated tip. The body of the adult scamp is covered with dark dots that tend to form lines on the lower part and roughly shaped rings on the upper, rings that are sometimes called "cat's paws." The markings are difficult to see if the fish is dark colored or in silhouette but the differently shaped tails and anal fins still distinguish the species at distance. Young scamps have squarer tails like the gag but have body markings and a straight rear edge of the anal fin like the adult scamp.

Cubera snappers have a similar body shape but do not have the protruding lower lip and their canine teeth are typically visible. They either have no body markings or they have bars.*

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* Anal fin = bottom fin closest to tail
Bar = vertical marking
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Goliath Grouper

***Epinephelus itajara* (Lichtenstein, 1822)**

Serranidae

Distinguishing characteristics:
The goliath grouper body is deep and wide, appearing oval shaped from the side, and shows the typical grouper protruding lower lip. The tail is rounded. Irregularly shaped dark bars show on the light-colored bodies and tails of smaller fish but lose their definition, becoming mottled blotches starting at the front, as the fish grows.

Relative abundance: Rare – few records
Relative size: Very large (>1 m or >39 in)

Similar species: Gag (*Mycteroperca microlepis*), Scamp (*M. phenax*), Cubera Snapper (*Lutjanus cyanopterus*)

Gags and scamps have the same body shape, but are substantially less deep bodied than the goliath grouper. All possess the protruding lower lip of the goliath grouper but neither gag nor scamp have a rounded tail. Cubera snappers have a similar body shape but do not have the protruding lower lip or rounded tail, and are more compressed in cross-section.

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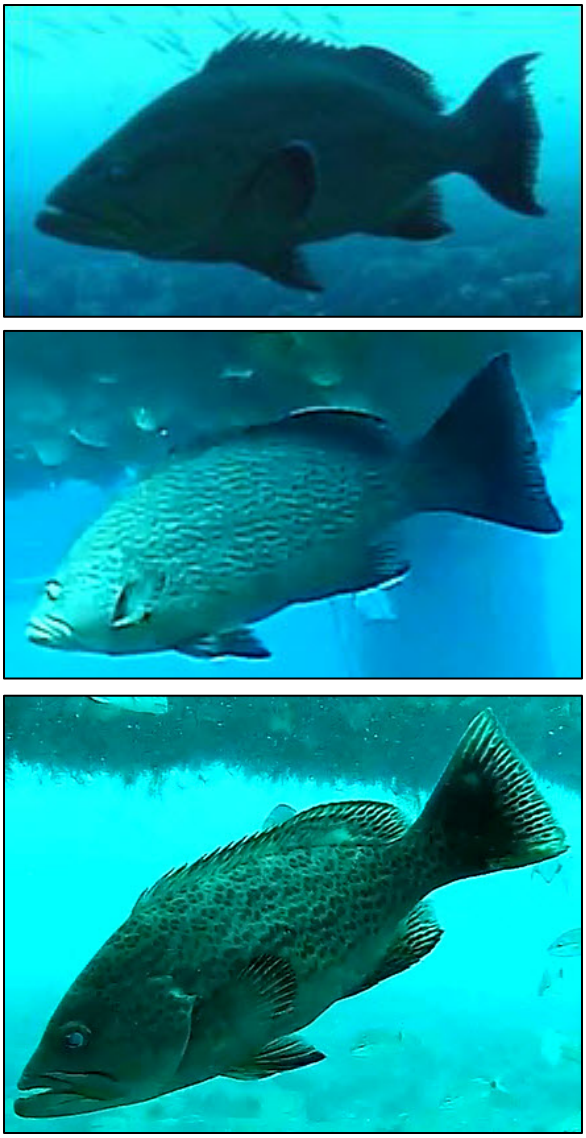
*Bar = vertical marking
Additional information, web links, and contributions.
SharkCam video (1)

Scamp

***Mycteroperca phenax* Jordan and Swain, 1884**
Serranidae



Dark phase individual with tail exserts (top), spotted phase (middle), and cat's paw phase (bottom)

Distinguishing characteristics:
From the side the scamp has the typical grouper body shaped like an elongated oval with a protruding lower lip. Young scamps have roughly squared-off tails but as they grow larger the tips of their tail become elongated. Elongated tail tips are called "exserts." The tail's trailing edge can be marginally scalloped, with the upper and lower portions slightly convex and the middle portion slightly concave. The rear edge of the scamp anal fin* is straight and develops an elongated tip as the fish grows.

On SharkCam, scamp bodies have been moderately dark, generally green, with darker markings and fins. The markings can be all dots, dots aggregated to form tightly spaced and irregular short lines, dots that form roughly shaped rings (called "cat's paws") or rectangles, or some combination. The markings are difficult to see if the fish is dark colored or is in silhouette.

Note: Color and pattern differences in scamp are related to social behaviors. See the Additional Information entry for further explanation.

Relative abundance: Frequent - seen often, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in) to Large (0.5–1 m or 20–39 in)

Similar species: Gag (*Mycteroperca microlepis*), Goliath Grouper (*Epinephelus itajara*), Cubera Snapper (*Lutjanus cyanopterus*)

The gag and the goliath grouper have similar body shapes and protruding lower lips as the scamp. The gag has a square tail and the goliath grouper has a rounded tail, neither tail having the elongated tips of the adult scamp. Gags have square tails like the young scamp but "wormy" markings rather than the scamp's "cat's paw" markings, and a rounded anal fin with no straight edge like the scamp.

Cubera snappers have a similar body shape but do not have the protruding lower lip. Their canine teeth are typically visible, they have square tails with no elongated tips, and they lack body markings or they have bars.

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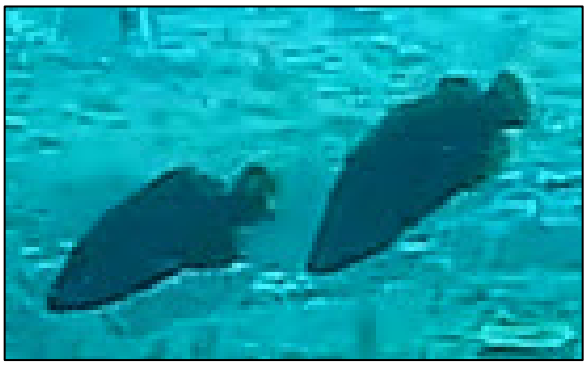
* Anal fin = bottom fin closest to tail
Bar = vertical marking
Additional information, web links, and contributions.
SharkCam video (1) (2) (3)

Whitespotted Soapfish

***Rypticus maculatus* Holbrook, 1855**

Serranidae



Distinguishing characteristics:
With their large dorsal and anal fins,* whitespotted soapfish are wedge shaped, like a door stop, with a rounded tail. They are dark colored, slightly paler underneath, and may have a light stripe that runs from the mouth, between the eyes, and up the back to the dorsal fin. Up close, randomly placed small white spots may be seen. Swimming, the fish looks sinuous, wriggling much of its body.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: Cubbyu (*Pareques umbrosus*)

The cubbyu is another all-dark fish that is frequently seen at the bottom. The cubbyu tends to be more of a schooling fish than the soapfish, often seen in groups of four to eight. The whitespotted soapfish lacks the distinctive first dorsal fin of the cubbyu.

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Hogfish

***Lachnolaimus maximus* (Walbaum, 1792)**

Labridae

Initial phase variations (top 2 images), terminal phase variations (bottom 2 images)

Distinguishing characteristics:
Hogfish, like all wrasses, swim using primarily their pectoral fins* with little or no tail movement. Also like other wrasses, hogfish change color patterns as they go through juvenile, initial, and terminal maturation phases. No juvenile hogfish have been seen on SharkCam.

Initial and terminal phase hogfish are shaped similarly. Long tips to dorsal and anal fins* give hogfish a slightly rectangular shape. The body is broad with a face that comes to a point and slopes back to the dorsal fin in almost a straight line. The angle of the slope of the head is greater in smaller (typically female) fish, and becomes more acute as fish transition to terminal phase males. The tail is almost as tall as the body and has long tips. Although not always visible, the first three spines on the dorsal fin are very long. Coloration on SharkCam ranges from white in large, adult males to light brown in smaller fish, with or without mottling. Large individuals have a distinct dark brown snout and forehead that appears black. Darker coloration and mottling in smaller fish can make it difficult to see body markings that distinguish initial and terminal phases. In natural light hogfish are distinctly pink.

Initial phase – Initial phase hogfish have a black blotch on the rear base of the dorsal fin, and none of the terminal-phase markings.
Terminal phase – Terminal phase hogfish have a black bar* on the base of their tail and a black spot on their side. The black blotch from the initial phase fades and is replaced by a black stripe* at the base of the dorsal fin. On large individuals, the snout becomes elongated like a pig's, hence the name.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in) to Large (0.5–1 m or 20–39 in)

Similar species: Blue Angelfish (*Holacanthus bermudensis*), Queen Angelfish (*H. ciliaris*)

Hogfish and blue and queen angelfish have similar silhouettes: broad bodies with trailing dorsal and anal fins that give the fish a roughly rectangular shape, but the angelfishes have a small "face" that is clearly distinct from the much larger hogfish head. Unlike the hogfish, the angelfish swim using primarily their tails, which are relatively small with no trailing tips.

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* Anal fin = bottom fin closest to tail
Bar = vertical marking
Dorsal fin = top fin
Pectoral fin = side fin
Stripe = horizontal marking

Additional information, web links, and contributions.
SharkCam video (1) (2)

Tautog

***Tautoga onitis* (Linnaeus, 1758)**

Labridae

Distinguishing characteristics:
Like other wrasses, the tautog swims using primarily its pectoral fins* with little or no tail movement. From the side, the body is shaped like an elongated oval with a bluntly rounded head. SharkCam males have had gray-black bodies with contrasting light colored chin and lips. The dorsal fin* tips are white and the tail has white edges on the top and bottom. Some individuals have light colored underparts and some have a white spot in the middle of the sides.

Relative abundance: Rare - few records
Relative size: Medium (20 cm–0.5 m or 8–20 in) to Large (0.5–1 m or 20–39 in)

Similar species: Black Sea Bass (*Centropristis striata*)

The black sea bass shares several characteristics with the tautog**:** swimming style, dark body, and white highlights on the long dorsal fin and tail. The bass is not elongated like the tautog and does not have light colored lips and chin. The bass has narrow white stripes* on the body that run from the head to the tail and are visible close up; the tautog has none.

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* Dorsal fin = top fin
Pectoral fin = side fin
Stripes = horizontal markings
Additional information, web links, and contributions.
SharkCam video (1) (2)

Cobia

***Rachycentron canadum* (Linnaeus, 1766)**

Rachycentridae

Distinguishing characteristics:
From the side, a cobia is shaped like an elongated oval with a rather pointed, flattened head. It has a large, shallowly forked tail with sharp tips, and a triangular dorsal fin.* The cobia body and fin coloration is dark, although it may have some lighter tones underneath. The cobia swims with its dorsal fin* erect and its large pectoral fins* outstretched and horizontal.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Large (0.5–1 m or 20–39 in) to Very large (>1 m or >39 in)

Similar species: Sharksucker (*Echneis naucrates*), Whitefin Sharksucker (*E. neucratoides*), Rainbow Runner (*Elagatis bipinnulata*), Greater Amberjack (*Seriola dumerili*)

A cobia could be mistaken for some species of shark, due to its elongated shape, forked tail, pointed fins and tail lobes, erect dorsal fin,* and outstretched, horizontal pectoral fins.* This seems particularly true when viewed on a website called “SharkCam.” SharkCam shark species, however, do not have symmetrical tails like the cobia. Instead, the upper lobe of the sharks’ tail is much larger than the lower lobe, being a significant portion of the sharks’ length.

Sharksuckers (genus *Echeneis*) resemble cobia in their elongated shape, typically dark coloration, and symmetrical tails. However, the forward portion of the top fin on sharksuckers (the portion above the eyes) is modified into a sucking disc that allows them to attach to larger animals. Sharksuckers seen on SharkCam are typically much smaller than the typical cobia, and are most often seen attached to or in tight association with a larger fish or turtle. Cobia are sometimes seen associated with large rays or sharks and can be easily mistaken for a large sharksucker

The rainbow runner and the greater amberjack have body shape similar to the cobia but their tails are more deeply forked, their heads are not flattened, and neither swim with outstretched pectoral fins.* The rainbow runner body coloration is lighter than the cobia, being shades of gray, and its tail is yellow. The greater amberjack nuchal mark also distinguishes it from the cobia.

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* Dorsal fin = top fin
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

SLOPING HEADS AND TAPERED BODIES

Snappers–Lutjanidae
- Cubera Snapper
- Gray Snapper
- Vermilion Snapper
- Yellowtail Snapper

Porgies–Sparidae
- Knobbed Porgy
- Red Porgy
- Saucereye Porgy
- Sheepshead
- Spottail Pinfish

Grunts–Haemulidae
- Striped Grunt
- Tomtate
- White Grunt

Cubera Snapper

***Lutjanus cyanopterus* (Cuvier in Cuvier and Valenciennes, 1828)**

Lutjanidae

Distinguishing characteristics:
From the side, the cubera snapper is shaped like an oval with a square tail. The lips are large and the lower lip does not protrude beyond the upper. SharkCam cubera bodies tend to be dark with darker fins. Usually there are no distinctive body markings. However, some lighter-toned individuals can show dark-toned bars* and some dark toned individuals can show light-toned bars. These bars are generally confined to the upper half of the body. Up close, the cubera's large canine teeth often show even if the mouth is closed.

A search of reference books or the web will produce images of cuberas that show varying amounts of red coloration. These are images made above the surface of the water, or in water less than 15 feet deep (about 4.5 meters), or in deeper water using artificial lighting, or are an artist's rendering using such images. Water at the depth of SharkCam, about 50 feet (about 15 meters), screens out all of the red and much of the orange portions of sunlight, leaving whatever colors the rest of the spectrum shows. This is why cuberas are not red on SharkCam.

Relative abundance: Unmarked individuals: Occasional - seen infrequently, not every visit; Barred individuals: Rare - few records
Relative size: Large (0.5–1 m or 20–39 in)

Similar species: Gag (*Mycteroperca microlepis*), Gray Snapper (*Lutjanus griseus*), Sheepshead (*Archosargus probatocephalus*)

The gag has a similar body and tail shape and large lips, and its body is often dark with darker fins. However, the grouper's protruding lip is a feature the cubera does not have. When lighter colored, the grouper's body shows short, dark, squiggly lines that the cubera does not have.

The gray snapper and the cubera have similar body and tail shapes consistent with their inclusion in the genus *Lutjanus*. SharkCam gray snappers have all had light gray colored bodies, unlike the darker cubera. They also often show a nuchal mark, a feature the cubera does not have.

The sheepshead resembles a cubera that has light colored bars. The sheepshead light-barred coloration extends across its abdomen, while the cubera light-barred coloration does not. The sheepshead side-on profile is asymmetrical, with the high point of the back above the pectoral fins. The highpoint the cubera is above the approximate center of its body.

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* Bar = vertical marking
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Gray Snapper

***Lutjanus griseus* (Linnaeus, 1758)**

Lutjanidae

Distinguishing characteristics:
From the side, the gray snapper is shaped like an oval with a sloped forehead and a square tail. On SharkCam, the body has been light gray. Fin coloration can vary between light gray like the body to a very dark tone. There is a dark ring around the eye which, against the light-colored body, makes the eye look large. Gray snapper often show a black band running from the mouth, through the eye, and up to the shoulder (above the base of the pectoral fin*). The band can lighten to be almost nonexistent or darken dramatically. When dark, the band obscures the eye ring.

Note: A frequently used alternative common name for the gray snapper is mangrove snapper. This usage is very prevalent in North and South Carolina.

Relative size: Medium (20 cm–0.5 m or 8–20 in)
Relative abundance: Occasional - seen infrequently, not every visit

Similar species: Cubera Snapper (*Lutjanus cyanopterus*)

The cubera snapper and the gray snapper have similar body and tail shapes. SharkCam gray snappers have all had light gray colored bodies, unlike the darker cubera. Cubera lips are more prominent than the gray's, and the cubera does not show a nuchal mark. On SharkCam, cuberas look more robust, chunkier, than grays, and if close to the camera, may show protruding canine teeth.

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* Pectoral fin = side fin

Additional information, web links, and contributions.
SharkCam video (1) (2)

Vermilion Snapper

***Rhomboplites aurorubens* (Cuvier in Cuvier and Valenciennes, 1829)**
Lutjanidae

Distinguishing characteristics:
From the side a vermilion snapper is shaped like an elongated oval with a shallowly forked tail and a large eye. The diameter of the eye is equal to the distance between it and the snout. The body and fins are generally a dull grey-green color, with the occasional individual showing a faint copper tinge. Close up, a slightly protruding lower lip is visible.

A search of reference books or the web will produce images of vermilion snappers that show varying amounts of vermilion (brilliant red) coloration. These are pictures taken above the surface of the water, or in water less than 15 feet deep (4.5 meters), or in deeper water using artificial lighting, or are an artist's rendering using such images. Water at the depth of SharkCam, about 50 feet (about 15 meters) screens out all of the red and much of the orange portion of sunlight, leaving whatever colors the rest of the spectrum shows. This is why vermilion snappers are not vermilion colored on SharkCam.

Relative abundance: Frequent - seen often, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Bigeye Scad (*Selar crumenophthalmus*)

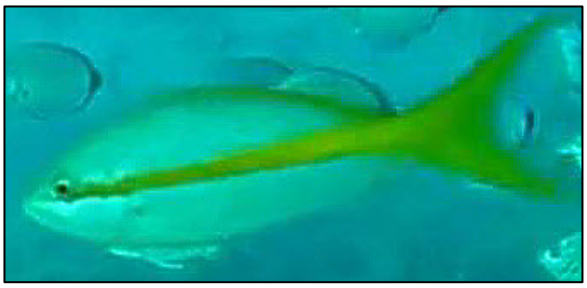
The bigeye scad has a similar body shape, apparent coloring, and large eye but has a deeply forked tail. When seen together, the vermilion snapper is noticeably larger.

Additional information, web links, and contributions.
SharkCam video (1)

Yellowtail Snapper

***Ocyurus chrysurus* (Bloch, 1791)**

Lutjanidae



Distinguishing characteristics:
From the side, the yellowtail snapper is oval shaped with a moderately forked tail that has pointed lobes. The body is light colored with a stripe* that starts as yellow at the tail and becomes darker towards the eye.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Horse-eye Jack (*Caranx latus*), Yellow Jack (*Carangoides bartholomaei*)

A horse-eye jack has a similar shape, light body coloring, and a forked yellow tail with pointed lobes. Unlike the yellowtail snapper, the horse-eye jack has no yellow stripe but has a narrow dark stripe that runs from the tail about half way to the mouth and has a large eye.

A yellow jack also has a similar shape, light body coloring, and a forked yellow tail with pointed lobes. Unlike the yellowtail snapper, the yellow jack has no yellow stripe.

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* Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1)

Knobbed Porgy

***Calamus nodosus* Randall and Caldwell, 1966**
Sparidae

Distinguishing characteristics:
The knobbed porgy has a sharp hump between its face and back profiles where they join. The knobbed porgy has an oval-shaped body. The highest part of its body, the hump, is forward of the body's centerline, approximately above its pectoral fin.* The profile of its face is roughly a straight line from its mouth to the hump, and the profiles of the face and underside form an approximately 60-degree angle. On SharkCam, the body and fin color is a silvery light gray that can develop darker gray bars.* If seen close to the camera, small speckles and fine stripes of blue and yellow may be apparent, especially on the face.

Knobbed porgies, like other porgies, are often seen slowly swimming close to the bottom with frequent brief stops. This start and stop behavior is a hunting technique, and it helps distinguish porgies from other species.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Red Porgy (*Pagrus pagrus*), Saucereye Porgy (*Calamus calamus*), White Grunt (*Haemulon plumierii*)

Two other porgies seen on SharkCam have somewhat similar body shapes and coloration, the red and saucereye porgies. Neither has a back as sharply humped as the knobbed porgy. The profile of the red porgy face is a gentle curve from its mouth to its back, and the profile of the saucereye porgy face is roughly a straight line from its mouth to a point even with its eye, where it makes a bend and continues straight across its nape to its back. Both these profiles differ from the steep, straight knobbed porgy profile. Finally, the red porgy is distinctly more elongated than the knobbed (and saucereye) porgy.

White grunts and knobbed porgies have similar body shapes, both fish have a facial profile that is roughly straight from the mouth to the back, and the grunt is often silvery gray like the porgy. The angle formed by the underside and face is less steep on the grunt than on the porgy, more like 45 degrees than 60 degrees, and the grunt does not show a prominent hump. When the white grunt shows its dark coloration, or when the porgy shows its bars, it is easy to distinguish the species. When the fish is silvery gray, the hump and the angle formed by the underside and face are the distinctive differences.

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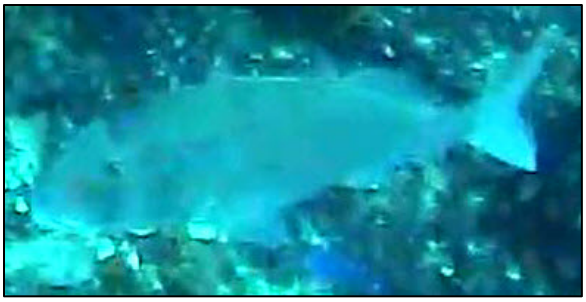
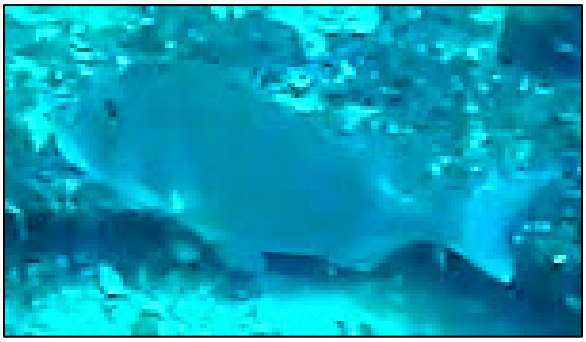
* Bar = vertical marking
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1)

Red Porgy

***Pagrus pagrus* (Linnaeus, 1758)**

Sparidae





Distinguishing characteristics:
The red porgy has a slightly elongated oval-shaped body. The highest part of its back is forward of the centerline, approximately above its pectoral fin.* The profile of its face is a gentle curve from its mouth to its back, where it continues curving to the base of its tail. On SharkCam, its body and fin color is a silvery, light gray that can develop darker gray bars.*

Red porgies, like other porgies, are often seen slowly swimming close to the bottom with frequent brief stops. This start and stop behavior is a hunting technique, and it helps distinguish porgies from other species.

A search of reference books or the web will produce images of red porgies that show red coloration. These are images made above the surface of the water, or in water less than 15 feet deep (about 4.5 meters), or underwater using artificial lighting, or are an artist's rendering using such specimens. Water at the depth of SharkCam, about 50 feet (about 15 meters), screens out all of the red and much of the orange portions of sunlight, leaving whatever colors the rest of the spectrum shows. This is why red porgies are not red on SharkCam.

Relative frequency: Rare - few records
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar Species: Knobbed Porgy (*Calamus nodosus*), Saucereye Porgy (*C. calamus*)

Two other porgies seen on SharkCam have somewhat similar body shapes and coloration, the knobbed and saucereye porgies. The profile of the knobbed porgy face is a straight line from its mouth to its back. The profile of the saucereye face is a straight line from its mouth to a point even with its eye, where it makes a bend and continues straight across its nape to its back. Both these profiles differ from the smooth curve from the red porgy's mouth to its tail. Unlike the red porgy, the knobbed porgy has a sharp hump where facial and back profiles meet, and the red porgy is more elongated than the other two species.

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* Bar = vertical marking
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1)

Saucereye Porgy

***Calamus calamus* (Valenciennes in Cuvier and Valenciennes, 1830)**
Sparidae

Distinguishing characteristics:
The saucereye porgy has an oval-shaped body. The highest part of its back is forward of the body's centerline, approximately above its pectoral fin.* The head profile is straight from its mouth to a point even with its eye, where it makes a bend and continues straight across its nape to its back. On SharkCam, the saucereye body and fin color is a silvery, light gray that can develop darker gray bars*. Despite its name, the saucereye eye is not larger than those of other porgies. Instead, a clear close-up will show a small, blue "saucer" (curved line) under the eye.

Saucereye porgies, like other porgies, are often seen slowly swimming close to the bottom with frequent brief stops. This start and stop behavior is a hunting technique, and it helps distinguish porgies from other species.

A search of reference books or the web will produce images of saucereye porgies that show pink coloration. These are pictures taken above the surface of the water, or in water less than 15 feet deep (about 4.5 meters), or in deeper water using artificial lighting, or are an artist's rendering using such specimens. Water at the depth of SharkCam, about 50 feet (about 14.5 meters), screens out all of the red and much of the orange portions of sunlight, leaving whatever colors the rest of the spectrum shows. This is why saucereye porgies are not pink on SharkCam.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Knobbed Porgy (*Calamus nodosus*), Red Porgy (*Pagrus pagrus*)

Two other porgies seen on SharkCam have somewhat similar body shapes and coloration, the knobbed and red porgies. The profile of the knobbed porgy head is a straight line from its mouth to its back. The profile of the red porgy head is a smooth curve from its mouth to the base of its tail. Both these profiles differ from that of the saucereye, which is roughly straight from the mouth to the eye and, with a bend there, straight across its nape to its back. Unlike the red porgy, the knobbed porgy has a sharp hump where facial and back profiles meet, and the red porgy is more elongated than the saucereye (and the knobbed) porgy.

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* Bar = vertical marking
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2) (3)

Sheepshead

***Archosargus probatocephalus* (Walbaum, 1792)**

Sparidae

Distinguishing characteristics:
From the side, a sheepshead has an oval-shaped body that is light colored with a gray head and six to seven silvery-gray and gray-black alternating bars* (zebra-like). The highest part of its back is forward of the body's centerline, approximately over its pectoral fins.* Sheepsheads move rather sedately through the water. A close approach to the camera may reveal the strangely human-like teeth, used for scraping hard shelled prey, like barnacles and molluscs, from the tower legs or bottom.

Relative abundance: Frequent - seen often, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Sergeant Major (*Abudefduf saxatilis*), Atlantic Spadefish (*Chaetodipterus faber*), juvenile Banded Rudderfish (*Seriola zonata*).

Three other fish seen on SharkCam have dark bars**:** sergeant majors, Atlantic spadefish, and juvenile banded rudderfish. A sergeant major differs from the sheepshead by having only five bars and the highest point of a sergeant major's back is over the body's center line, and it seems to be constantly moving quickly, always busy. The sergeant major is very small compared to the sheepshead.

The Atlantic spadefish differs by being spade-shaped (triangular) and having a gray body. In addition, spadefish bars fade one by one with age, so they have varying numbers of bars.

The juvenile banded rudderfish differs by having an elongated body shape and a dark band, which runs from the mouth, across the eye, to the front of the dorsal fin.

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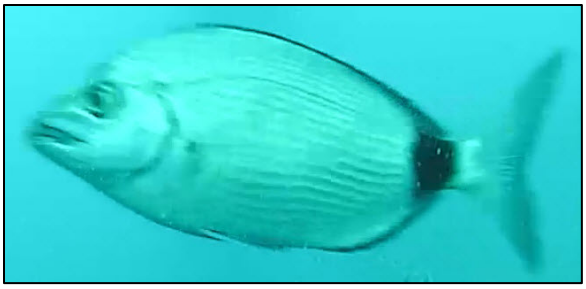
* Bar = vertical marking
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1)

Spottail Pinfish

***Diplodus holbrookii* (Bean, 1878)**

Sparidae



Distinguishing characteristics:
From the side, the spottail pinfish is shaped like an oval with a light colored silvery-gray body. A wide, dark band encircles the base of the tail and a dark line extends up the back and down the belly from the band. Close up, narrow alternating dark and light stripes* can be seen on the body. This is the most frequently seen fish on SharkCam.

Relative abundance: Abundant – many seen every visit
Relative size: Small (10–20 cm or 4–8 in)

Similar species: Tomtate (*Haemulon aurolineatum*), Bermuda Chub (*Kyphosus sectatrix*)

Two species are often seen with the spottail pinfish, the tomtate and the Bermuda chub. The tomtate has a large, dark blotch at the base of its tail, similar to the Spottail pinfish, but no dark lines extend up the back and down the belly and its body shape is more elongated (less tall). The Bermuda chub can be light colored like the pinfish but has no dark band or blotch at the base of its tail, is larger than the pinfish, and is slightly egg-shaped with its tail at the wider end (helpful when in silhouette).

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1)

Striped Grunt

***Haemulon striatum* (Linnaeus, 1758)**

Haemulidae

Distinguishing characteristics:
From the side, a striped grunt is shaped like an elongated oval with about five black stripes* on a light-colored body (4–6 stripes, depending on age and lighting angle). The lowermost stripe is the widest and runs from beneath the eye to the middle of the tail.

Relative abundance: Rare - few records
Relative size: Small (10–20 cm or 4–8 in)

Similar species: Tomtate (*Haemulon aurolineatum*)

Tomtates typically have a small to large and dark blotch at the base of the tail. Their bodies are deeper than the striped grunt with the maximum body depth occurring at the back of the head where the dorsal fin occurs.

Observed striped grunt on SharkCam have all been seen schooling with similarly sized fish of other species.

_____

* Stripe = horizontal marking

Additional information, web links, and contributions.
SharkCam video (1) (2)

Tomtate

***Haemulon aurolineatum* Cuvier in Cuvier and Valenciennes, 1830**

Haemulidae

Distinguishing characteristics:
From the side, a tomtate is shaped like a slightly elongated oval. Its body is light colored with a dark spot at the base of its tail. It can have one or more dark, narrow stripes* or no stripe at all. On some tomtates, the dark coloration of the spot radiates out along the top and bottom edges of the tail.

Relative abundance: Abundant – many seen every visit
Relative size: Small (10–20 cm or 4–8 in)

Similar Species: Spottail Pinfish (*Diplodus holbrookii*), Striped Grunt (*Haemulon striatum*), Bigeye Scad (*Selar crumenophthalmus*), Round Scad (*Decapterus punctatus*)

Tomtates are often seen with spottail pinfish but are distinguished by their elongated shape and lack of dark lines extending up the back and down the belly. Striped grunts occasionally school with tomtates but are distinguished by their more prominent and wider stripes and lack of a dark spot at the bases of their tails. Young tomtates occasionally school with bigeye scad and round scad but are always distinguishable by the dark spot at the base of their tails and a deeper body than the scads.

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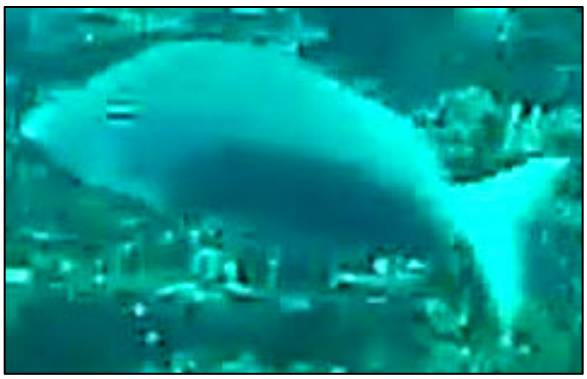
* Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1)

White Grunt

***Haemulon plumierii* (Lacepède, 1801)**

Haemulidae



Distinguishing characteristics:
From the side, a white grunt is roughly oval shaped, with a somewhat flattened underside and a head profile that is straight from the mouth to the back. The underside and face form an approximately 45-degree angle. On SharkCam, depending on the lighting angle, the white grunt usually looks like a dark or silvery white shape but occasionally will show a darker bluish gray below its midline or a bluish-gray tint to the head. Up close, the head is dark with horizontal light blue, almost white lines, and the body shows narrow rows of dark- and light-toned small rectangles.

Note: The individual in the top image has a bump and notch where the head joins the dorsal surface, probably a deformity or healed wound. This individual has been seen on SharkCam many times.

Relative abundance: Frequent - seen often, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Knobbed Porgy (*Calamus nodosus*)

Knobbed porgies and white grunts have similar body shapes**:** oval with a somewhat flattened underside and a head profile that is straight from the mouth to the back. Unlike the white grunt, the knobbed porgy has a sharp hump (knob) to its back. The porgy facial profile is steeper, more of a 60-degree angle than the 45-degree angle of the grunt. When the grunt shows its dark coloration, it is easy to distinguish from the light colored porgy, but when the grunt shows its light coloration, the porgy's knobbed back and the angle of the head profile are distinctive differences.

Additional information, web links, and contributions.
SharkCam video (1) (2)

ODDLY-SHAPED SWIMMERS

Gray Triggerfish

***Balistes capriscus* Gmelin, 1789**

Balistidae

Distinguishing characteristics:
The gray triggerfish swims using primarily its large, symmetric dorsal and anal fins,* "flapping" them like a sidewise bird. From the side the fish is oval shaped with extended tips on its tail. Its color can be gray, tan, or a greenish version of either. The underside and one or two bars* are lighter toned than the rest of the body.

Relative abundance: Rare - few records
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: No other fish seen on SharkCam swims or looks like the gray triggerfish.

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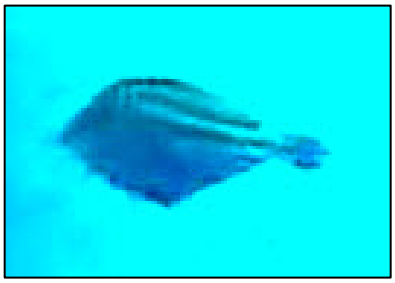
* Anal fin = bottom fin closest to tail
Bar = vertical marking
Dorsal fin = top fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Orangespotted Filefish

***Cantherhines pullus* (Ranzani, 1842)**

Monacanthidae



Distinguishing characteristics:
The orangespotted filefish swims using primarily its dorsal and anal fins* with little or no tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. From the side, the orangespotted filefish is shaped like a diamond on its side, with the tail end slightly longer than its head end. The head end looks uniformly dark, while the tail end has alternating dark and light stripes.* At the top of the base of the tail is a white spot, and the tail itself is carried closed.

Relative abundance: Rare - few records
Relative size: Small (10–20 cm or 4–8 in)

Similar species: Scrawled Filefish *(Aluterus scriptus)*

The scrawled filefish is more elongate and typically much larger than the orangespotted filefish. Scrawled filefish lack alternating light and dark stripes, and their color and patterns are typically much more complex. Often blue will be a dominant color on the scrawled filefish.

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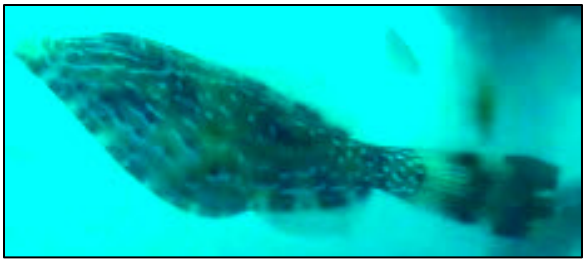
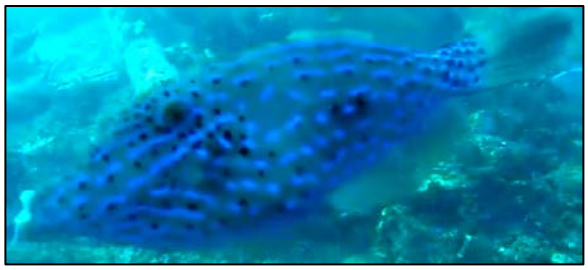
* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Stripe = horizontal marking
Additional information, web links, and contributions.

Scrawled Filefish

***Aluterus scriptus* (Osbeck, 1765)**

Monacanthidae





Distinguishing characteristics:
The scrawled filefish swims using primarily its dorsal and anal fins* with little or no tail movement. From the side, the scrawled filefish is shaped like a slightly elongated oval with a long face that tapers to a small, upward pointing snout. The tail end is also long, finishing with a long, dark tail that may be carried closed and limp. More often the tail is slightly open and looking like a broom, earning the fish the nickname "broomtail." From the front or back, this filefish is very thin.

The scrawled filefish has an amazing ability to change colors and color patterns, often very quickly. On SharkCam the most common combination of color and pattern is a dark background covered by a series of short, bright blue lines that are roughly oriented to reflect the body's outline. Interspersed among the lines are spots that may be very dark or very light toned. This combination includes white lips. Other combinations may include white edges to the blue lines, or a varying number of short, white, vertical lines, with or without any blue lines.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Orangespotted Filefish (*Cantherhines pullus*)

The orangespotted filefish has a similar shape and also swims with little or no tail movement. However, its body is distinctly diamond-shaped and its alternating dark and light stripes* are unlike any pattern the scrawled filefish shows.

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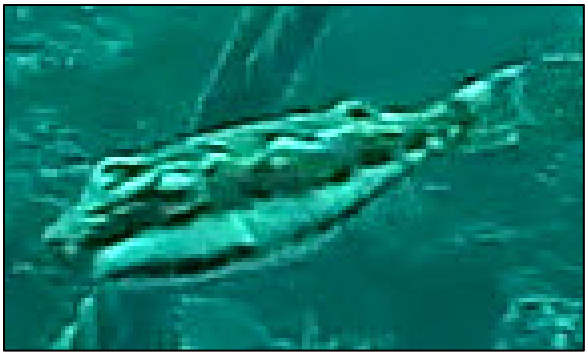
* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Stripes = horizontal markings
Additional information, web links, and contributions.
SharkCam video (1) (2)

Bandtail Puffer

***Sphoeroides spengleri* (Bloch, 1785)**

Tetraodontidae



Distinguishing characteristics:
The banded pufferfish is a small, slender fish that swims using its dorsal and anal fins* with little or no tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. The upper body is dark with small white markings and bumps. The lower body is white with a single dark stripe* that turns to a row of dots towards the tail. The tail has two dark bars* and is carried closed or relaxed.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Very small (<10 cm or 4 in) to Small (10–20 cm or 4–8 in)

Similar species: Bluehead (*Thalassoma bifasciatum*), Clown Wrasse (*Halichoeres maculipinna*), Slippery Dick (*H. bivittatus*), Yellowhead Wrasse (*H. garnoti*)

Several SharkCam wrasses are small, slender, and swim with little or no tail movement like the banded pufferfish: bluehead, clown wrasse, slippery dick, and yellowhead wrasse. None have the bandtail puffer's combination of dark upper body and white lower body with a dark stripe except the slippery dick. The white markings on the upper body of the initial phase slippery dick are bars, not spots and short lines like the puffer's. The juvenile and terminal phase slippery dicks have no white markings on their upper bodies, and none of the slippery dick black lines turn into dots towards the tail.

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* Anal fin = bottom fin closest to tail
Bar = vertical marking
Dorsal fin = top fin
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1)

Sharpnose Puffer

***Canthigaster rostrata* (Bloch, 1786)**

Tetraodontidae

Distinguishing characteristics:
The sharpnose puffer is a small fish, 2–3 inches long (3–8 centimeters), that swims using primarily its dorsal and anal fins* with little or no tail movement. Because they are small and move rapidly, the swimming fins are likely to be invisible on SharkCam except when a specimen approaches the camera closely. The body is stout, oval-shaped, with a pointed head and a sharp snout. The body is dark toned on top with a wide white stripe* that runs from the eye to the end of the tail. The tail is carried closed and has a dark edge on the top and bottom.

Relative abundance: Rare - few records
Relative size: Very small (<10 cm or 4 in)

Similar species: No other fish seen on SharkCam is shaped or marked like the sharpnose puffer.

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1) (2)

Sharksucker

***Echeneis naucrates* Linnaeus, 1758**

Echeneidae

Distinguishing characteristics:
A sharksucker is a long, slender fish most often seen attached to or swimming alongside a larger fish, like a shark. The pectoral fins* are angled upward, making it look like the fish is swimming upside down. A young sharksucker's body and fins are dark gray with a wide, black stripe* the length of its body. It has a thin, white stripe above and below the black stripe, and white borders on the ends of the dorsal and anal fins* and on the top and bottom edges of the tail. As the fish grows older and larger, the dark gray, black, and white tones fade until the fish is light gray with only a white-bordered black mask across the mouth and eyes.

Relative abundance: Rare - few records
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Whitefin Sharksucker (*Echeneis neucratoides*), juvenile Cobia (*Rachycentron canadum*)

Young whitefin sharksuckers are distinguished from young sharksuckers by the wider white borders on the sides of their tails.

Cobia are typically much larger and darker than the sharksucker. They too will associate with larger animals, typically rays or turtles, but will often be only loosely associated, as opposed to attached. They share the flattened head, but the sharksucker's head will be noticeably flattened relative to the cobia. No small cobia have been confirmed on SharkCam.

Note: In addition to the potential for confusion by having "sharksucker" and "whitefin sharksucker" be different species, the young are often referred to collectively as "sharksucker" because they are difficult to distinguish from each other.

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Pectoral fin = side fin
Stripe = horizontal marking
Additional information, web links, and contributions.
SharkCam video (1) (2)

Whitefin Sharksucker

***Echeneis neucratoides* Zuiew, 1789**

Echeneidae

Distinguishing characteristics:
A whitefin sharksucker is a long, slender fish most often seen attached to or swimming alongside a larger fish, like a shark. The pectoral fins* are angled upward, making it look like the fish is swimming upside down. The body and fins are dark gray with a wide, black stripe* the length of its body and white borders on the stripe, the ends of the dorsal and anal fins,* and the top and bottom edges of the tail.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: Sharksucker (*Echeneis naucrates*), juvenile Cobia (*Rachycentron canadum*)

Young whitefin sharksuckers are distinguished from young sharksuckers (*Echeneis naucrates*) by the wider white borders on the sides of their tails. Sharksuckers tend to be more lightly colored, appearing more gray than the typical black of the whitefin sharksucker.

Cobia are typically much larger than the whitefin sharksucker. They too will associate with larger animals, typically rays or turtles, but will often be only loosely associated, as opposed to attached. They share the flattened head, but the whitefin sharksucker's head will be noticeably flattened relative to the cobia. No small cobia have been confirmed on SharkCam.

Note: In addition to the potential for confusion by having "sharksucker" and "whitefin sharksucker" be different species, the young are often referred to collectively as "sharksucker" because they are difficult to distinguish from each other.

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* Anal fin = bottom fin closest to tail
Dorsal fin = top fin
Pectoral fin = side fin
Stripe – horizontal marking
Additional information, web links, and contributions.

BOTTOM FISHES

Basses–Serranidae
- Belted Sandfish
- Harlequin Bass

Drums–Sciaenidae
- Cubbyu

Scorpionfishes–Scorpaenidae
- Red Lionfish
- Spotted Scorpionfish

Blennies–Labrisomidae
- Saddled Blenny

Goatfishes–Mullidae
- Spotted Goatfish

Squirrelfishes–Holocentridae
- Squirrelfish

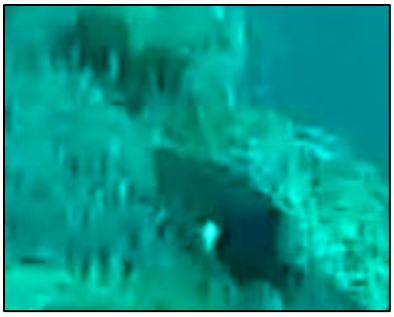
Moray eels–Muraenidae
- Green Moray
- Spotted Moray

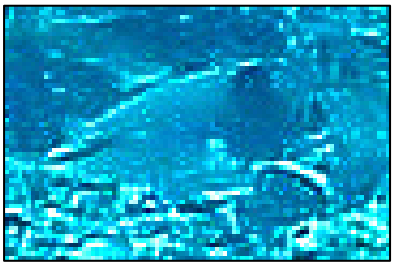
Snake eels–Ophichthidae
- Sharptail Eel

Belted Sandfish

***Serranus subligarius* (Cope, 1870)**

Serranidae





Distinguishing characteristics:
From the side, the belted sandfish is triangular and dark colored with a strongly contrasting white belly patch. Depending on how dark the fish is, several darker bars* may be seen. The darkest bar is triangular, widest at the top, and is located behind the white belly patch. The fish has large pectoral fins* and all fins are finely spotted.

Note: A belted sandfish uses the camera base plate as its home.

Relative abundance: Frequent – seen often, not every visit
Relative size: Very small (<10 cm or 4 in)

Similar species: No other fish seen on SharkCam resemble belted sandfish.

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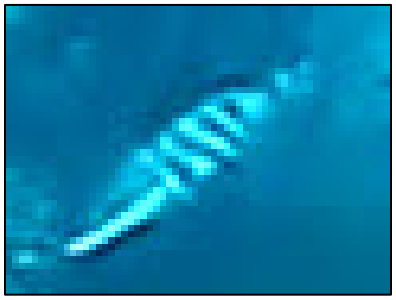
* Bar = vertical marking
Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1)

Harlequin Bass

***Serranus tigrinus* (Bloch, 1790)**

Serranidae



Distinguishing characteristics

The harlequin bass is a small fish, typically less than 6 inches long, that generally stays near the bottom and will hover motionless for periods of time. The fish has an elongated (tubular) body and a sharply pointed head. The body is white, with the bottom half sometimes showing yellow, and has dark bars.* Bars on the bottom half often line up with the light-colored portions of the top half of the body.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Small (10–20 cm or 4–8 in)

Similar species: No other fish seen on SharkCam resemble harlequin bass.

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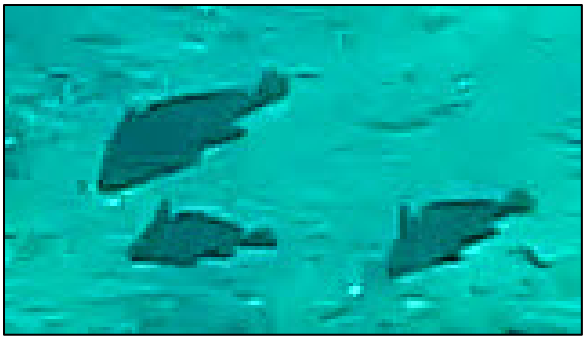
* Bar = vertical marking

Additional information, web links, and contributions.

Cubbyu

***Pareques umbrosus* (Jordan and Eigenmann, 1889)**
Sciaenidae



Distinguishing characteristics:
The cubbyu is an all-dark, bottom-dwelling fish that is usually seen in small groups. The body shape is asymmetric, with the high point of the back forward of the body center (over pectoral fin*). The first dorsal fin, when raised, is distinctly taller than the second and is separated from the second by the width of the first. A group of cubbyu is frequently seen by SharkCam maintenance divers under the ledge below the camera installation.

Note: Identification as a cubbyu and not a dark variation of a highhat (*Pareques acuminatus*), another drum, is based on close observation during dives at Frying Pan Tower.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: Whitespotted Soapfish (*Rypticus maculatus*)

The whitespotted soapfish is a similarly all-dark fish that is frequently seen at the bottom. The soapfish tends to be more solitary than the cubbyu and lacks the distinctive first dorsal fin of the cubbyu.

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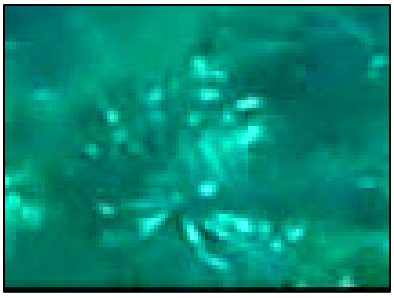
* Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Red Lionfish

***Pterois volitans* (Linnaeus, 1758)**

Scorpaenidae



Distinguishing characteristics:
The red lionfish dorsal and pectoral fins* look like bunches of long, white feathers marked with dark bands across their width. The white-tipped "feathers" can spread out in all directions, obscuring and camouflaging the body. The fish is a bottom dweller and, when stationary, is almost impossible to distinguish on SharkCam from bottom vegetation. Only when the fish is swimming or being moved about by wave action (it is a weak swimmer) does the mobile collection of white-tipped "feathers" catch the eye. Glimpses of the body show a light-toned, elongated oval shape marked with narrow, dark bars.

The "red" in the red lionfish name comes from brownish-red markings on the light colored body and fins, as images in reference books and online will show. These are images made above the surface of the water, or in water less than 15 feet deep (about 4.5 meters), or in deeper water using artificial lighting, or are an artist's rendering using such images. Water at the depth of SharkCam, about 50 feet (about 15 meters), screens out most of the red and much of the orange portions of sunlight, leaving whatever colors the rest of the spectrum shows. This is why lionfish markings look dark, and not red, on SharkCam. Larger individuals tend to be darker and less patterned (an alternate common name for the red lionfish is zebrafish) than the small fish seen so far on SharkCam.

Red lionfish are not native to the Atlantic Ocean and are considered an invasive species that poses a threat to native reef fishes. Please report SharkCam sightings of red lionfish by making a comment on the SharkCam website. Two lionfish have been seen on SharkCam. One was removed from the camera view on 27 December 2015.

Relative abundance: Rare - few records
Relative size: Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: Another species of invasive lionfish, *Pterois miles*, also occurs at very low frequencies in North Carolina waters. *Pterois volitans* and *P. miles* are visually indistinguishable and most researchers do not attempt to separate them within the invasive range. No other fish seen on SharkCam resembles the red lionfish.

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* Bar = vertical marking
Dorsal fin = top fin
Pectoral fin = side fin
Additional information, web links, and contributions.

Spotted Scorpionfish

***Scorpaena plumieri* Bloch, 1789**

Scorpaenidae

Distinguishing characteristics:
The spotted scorpionfish is a heavy-bodied fish that spends most of its time lying on the bottom, blending in with its surroundings using a combination of dark and light bars, spots, and mottling, and an ability to change color. It has a large head and its light-colored tail has three dark bars. The inside base of its pectoral fins* have a black patch with brilliant white spots

A search of reference books or the web will produce images of spotted scorpionfish that show varying amounts of red, orange, and purple coloration. These are pictures taken above the surface of the water, or in water less than 15 feet deep (4.5 meters), or in deeper water using artificial lighting, or are an artist's rendering using such images. Water at the depth of SharkCam, about 50 feet (about 15 meters) screens out all of the red and much of the orange portion of sunlight, leaving whatever colors the rest of the spectrum shows. This is why spotted scorpionfish look dark on SharkCam.

Relative abundance: Rare - few records
Relative size: Medium (20 cm–0.5 m or 8–20 in)

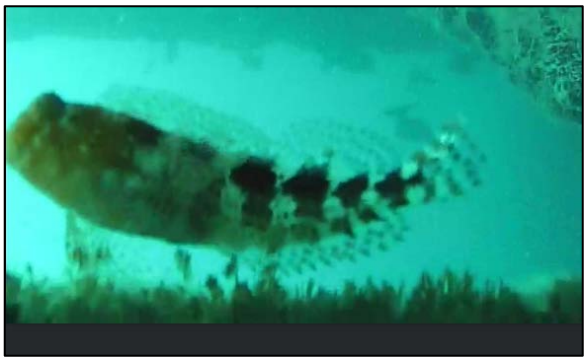
Similar species: No other fish seen on SharkCam resembles the spotted scorpionfish.

_____

* Pectoral fin = side fin
Additional information, web links, and contributions.
SharkCam video (1) (2)

Saddled Blenny

***Malacoctenus triangulatus* Springer, 1959**
Labrisomidae



Distinguishing characteristics:
Blennies have modified pelvic fins* that enable them to "walk" on the bottom and climb things. A SharkCam saddled blenny uses its pelvic fins to cling head up or head down on the side of the camera cleaning bar and, less frequently, the camera glass housing. Because it is so small, less than three inches long (about 7.5 centimeters), this is the only way a saddled blenny has been seen on SharkCam. Its body tapers from a blunt, bulbous head down to its tail and is light colored with a series of dark blotches along its upper side and smaller, lighter toned blotches below.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Very small (<10 cm or 4 in)

Similar species: No other fish seen on SharkCam resembles the saddled blenny or perches on the cleaning bar.

_____

* Pelvic fin = bottom fin closest to head

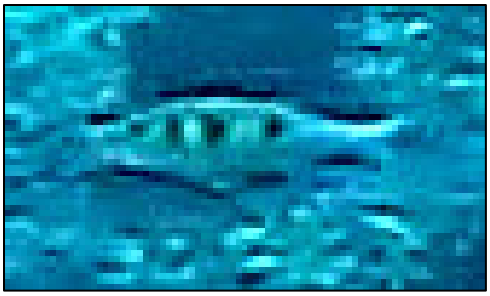
Additional information, web links, and contributions.

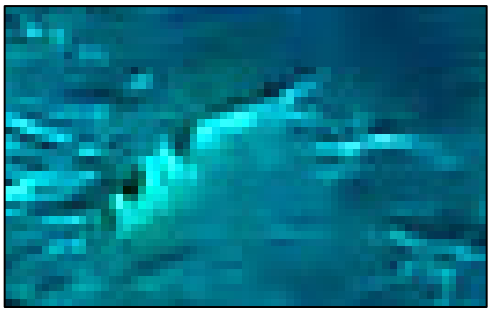
SharkCam video (1)

Spotted Goatfish

***Pseudupeneus maculatus* (Bloch, 1793)**

Mullidae





Distinguishing characteristics:
From the side, the spotted goatfish is shaped like an elongated oval that is light colored, has a deeply forked tail, and has three large, dark blotches along its side (the dark eye can look like a fourth blotch). The goatfish is often seen rooting around on the bottom, stirring up sediments in the hopes of catching a hidden tidbit. Several species, including the bar jack, yellowtail snapper, and black sea bass, have been observed waiting to see whether rooted-up prey escapes the goatfish.

A search of reference books or the web will produce images of spotted goatfish that show varying amounts of red coloration. These are pictures taken above the surface of the water, or in water less than 15 feet deep (4.5 meters), or underwater using artificial lighting, or are an artist's rendering using such specimens. Water at the depth of SharkCam, about 50 feet (about 15 meters) screens out most of the red and much of the orange portions of sunlight, leaving whatever colors the rest of the spectrum shows. This is why spotted goatfish show no red coloration on SharkCam.

Relative abundance: Rare – few records
Relative size: Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: No other species seen on SharkCam has three large, dark blotches along its side.

Additional information, web links, and contributions.
SharkCam video (1) (2)

Squirrelfish

Holocentrus adscensionis* (Osbeck, 1765)

Holocentridae

Distinguishing characteristics:
From the side, SharkCam squirrelfish is shaped like an oval with moderately long and wavy fins and lobes of a deeply forked tail. The body is dark, in good lighting showing light brown, and the fins and tail are light toned. A white saddle may show, extending down from the rear portion of the dorsal fin.* The eye is large, believed to be an adaptation for nighttime vision.

A search of reference books or the web will produce images of squirrelfish showing reddish-pink coloration. These are images made above the surface of the water, or in water less than 15 feet deep (4.5 meters), or in deeper water using artificial lighting, or are an artist's rendering using such images. Water at the depth of SharkCam, about 50 feet (about 15 meters) screens out most of the red and much of the orange portions of sunlight, leaving whatever colors the rest of the spectrum shows. This is why on SharkCam squirrelfish looks brown.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: No other fish seen on SharkCam resembles the squirrelfish.

_____

* Dorsal fin = top fin
Visual identification as *Holocentrus adscensionis* is considered provisional. Several other species of squirrelfish also occur in the SharkCam (North Carolina) area. Although there are visually distinguishing characteristics among the squirrelfishes, no individuals have been observed closely enough on SharkCam to allow a definitive identification.
Additional information, web links, and contributions.

Green Moray

***Gymnothorax funebris* Ranzani, 1839**

Muraenidae

Distinguishing characteristics:
The green moray is a long, slender fish, heavier bodied (bigger around) and longer than most eels. Color on camera is dark brown but may show a greenish tint under good lighting. The green moray rests and sleeps during the day in a crevasse or under a ledge, often with part of its body sticking out. The mouth opens and closes continually to pump water across its gills.

Relative abundance: Rare - few records
Relative size: Large (0.5–1 m or 20–39 in) to Very large (>1 m or >39 in)

Similar species: Spotted Moray (*Gymnothorax moringa*), Sharptail Eel (*Myrichthys breviceps*)

The only other eels seen on SharkCam have been the spotted moray and sharptail eel. The green moray lacks markings on its skin, while the “spots” of the spotted moray are indistinct, unlike the sharptail eel, which has white spots on a dark body. The body diameter of the sharptail eel is relatively uniform, unlike the tapered form of the spotted and green morays.

Additional information, web links, and contributions.
SharkCam video (1)

Spotted Moray

***Gymnothorax moringa* (Cuvier, 1829)**

Muraenidae

Distinguishing characteristics:
The spotted moray is a long, slender fish, heavier bodied (bigger around) and longer than most eels. The body is pale colored but is covered with so many dark colored spots and blotches that it almost like the reverse, a dark body covered with white blotches. The body is compressed laterally, meaning that from the front it is shaped like an oval. Close up it shows large white spots on its lower jaw. The mouth opens and closes continually to pump water across its gills.

Relative abundance: Rare - few records
Relative size: Large (0.5–1 m or 20–39 in)

Similar species: Green Moray (*Gymnothorax funebris*), Sharptail Eel (*Myrichthys breviceps*)

The green and spotted morays have similar heavy bodies but the green moray has no obvious markings and appears more robust than the spotted moray. The sharptail eel is much more slender than the green or spotted moray and it has larger white spots arranged in a row along its body.

Additional information, web links, and contributions.
SharkCam video (1) (2)

Sharptail Eel

***Myrichthys breviceps* (Richardson, 1848)**

Ophichthidae

Distinguishing characteristics:
The sharptail eel is snakelike in appearance; a long, slender, tube-shaped fish that crawls along the bottom. The eel has a gray or dark body and light-colored spots along its entire length. When seen it will be traveling, frequently stopping to poke its head into cracks and crevices in search of prey. The entire body may disappear and then reappear nearby.

Relative abundance: Rare - few records
Relative size: Large (0.5–1 m or 20–39 in)

Similar species: Green Moray (*Gymnothorax funebris*), Spotted Moray (*G. moringa*)

The only other eels seen on SharkCam have been the green moray and spotted moray. The green moray lacks markings on its skin, while the "spots" of the spotted moray are indistinct, unlike the sharptail eel. Both morays are much more stoutly bodied than the sharptail eel, and much less likely to be seen out and moving away from their den. When under cover the opening and closing of the moray's mouth is usually apparent.

Additional information, web links, and contributions.
SharkCam video (1)

NOT FISHES

Lobsters–Palinuridae
- Caribbean Spiny Lobster

Loons–Gaviidae
- Common Loon

Octopuses–Octopodidae
- Common Octopus

Apes–Hominidae
- Human (Freediver and Scuba Diver)

Sea turtles–Cheloniidae
- Loggerhead Sea Turtle

Jellyfishes–Ulmaridae
- Moon Jelly

Globular sea urchins–Toxopneustidae
- West Indian Sea Egg

Caribbean Spiny Lobster

***Panulirus argus* (Latreille, 1804)**

Palinuridae

Distinguishing characteristics:
Caribbean spiny lobsters look like what people think of when they think of lobsters, but without the big claws. They have a tube-shaped body, a flat tail, and two long, whip-like antennae, and two shorter, thinner antennae between the obvious ones. They crawl around on ten spindly legs.

Relative abundance: Rare - few records
Relative size: Medium (20 cm–0.5 m or 8–20 in) to Large (0.5–1 m or 20–39 in).

Note: Caribbean spiny lobsters seen on SharkCam are likely to be very large relative to the diminutive lobster you may have eaten.

Similar species: Nothing else seen on SharkCam resembles a Caribbean spiny lobster.

Additional information, web links, and contributions.
SharkCam video (1)

Common Loon

***Gavia immer* (Brunnich, 1764)**

Gaviidae

Distinguishing characteristics:
Common loons are diving birds that swim like ducks at the surface and can dive to considerable depths. They dive with their wings folded, using their large webbed feet to swim. Their bodies are torpedo shaped, with a long, snakelike neck and head with a long cone-shaped beak and large eyes. While diving, their feet stick out behind them to paddle them in quick bursts. Underwater, their feathers lay flat against their bodies and they can appear very slender, especially around the head and neck.

Relative abundance: Rare - few records
Relative size: Medium (20 cm–0.5 m or 8–20 in)

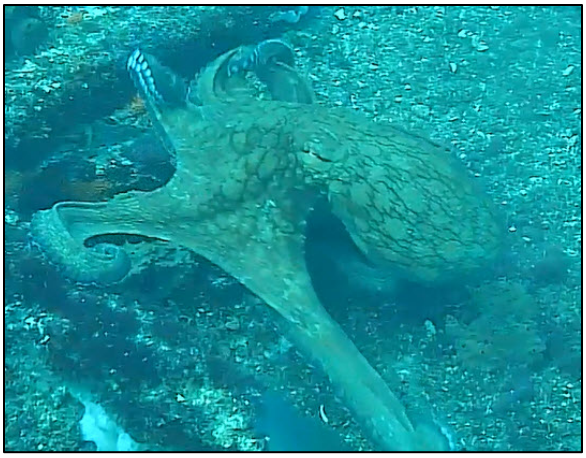
Similar species: Nothing else seen on SharkCam resembles a common loon.

Additional information, web links, and contributions.

Common Octopus

Octopus vulgaris* Cuvier, 1797

Octopodidae



Distinguishing characteristics:
An octopus has a bulbous head and eight thick arms. It moves by crawling with its arms or by swimming with its head in front and its arms trailing behind and held together. An octopus can be almost any color and any combination of colors, and can change its selection rapidly. It can change the texture of the body from a smooth profile to skin featuring many protrusions and bumps. These are used to mimic the texture of the surroundings

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Medium (20 cm–0.5 m or 8–20 in)

Similar species: Nothing else seen on SharkCam resembles an octopus.

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* This is a tentative identification based on frequency of occurrence in North Carolina and the thick arms seen on SharkCam.

Additional information, web links, and contributions.
SharkCam video (1) (2)

Octopus crawling on the dome of SharkCam

Human (Freediver and Scuba Diver)

***Homo sapiens* "*aquaticus*" and *H. sapiens* "*scubica*"**
Hominidae

Distinguishing characteristics:
Human divers seen on SharkCam come in two types, scuba and free. Both types come in a variety of colors, although black is most common. Scuba divers can be distinguished by their blocky backs, due to one or two air tanks, and the bubbles that emanate from their head ends. Freedivers lack tanks and bubbles, and will be carrying less equipment. Frequently both types will carry a large speargun. Both types appear to be friendly, frequently waving at the camera. Scuba types can be further categorized as recreational or (camera) maintenance. Freedivers appear to be only recreational.

Relative abundance:
Freedivers**:** Rare - few records
Scuba divers**:** Occasional - seen infrequently, not every visit.
Relative size: Very large (>1 m or >39 in)

Similar species: Human divers are unlikely to be mistaken for anything else swimming around on SharkCam.

Additional information, web links, and contributions.
SharkCam video (1)

Loggerhead Sea Turtle

***Caretta caretta* (Linnaeus, 1758)**

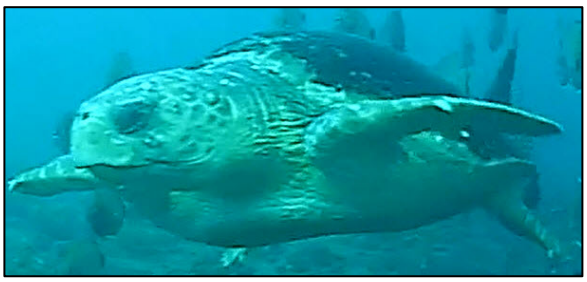
Cheloniidae

Distinguishing characteristics:
Loggerhead sea turtles seen on SharkCam have all been adults larger than any of the fish except the sharks. The domed upper part of their shells has varied from a mottled gray-green to almost black depending, in part, on the amount of marine growth such as algae and barnacles (lighter colored circular bumps). Skin color has ranged from the same mottled gray-green to almost white. Loggerheads are slow swimmers, using only their front flippers and letting their rear flippers trail behind.

Relative abundance: Occasional - seen infrequently, not every visit
Relative size: Very large (>1 m or >39 in)

Similar species: Nothing else seen on SharkCam resembles a loggerhead sea turtle.

Additional information, web links, and contributions.
SharkCam video (1) (2)



Moon Jelly

***Aurelia aurita* (Linnaeus, 1758)**

Ulmaridae

Distinguishing characteristics:
Moon jellyfish are translucent white upside-down bowl shapes with a brighter white rim. They swim by opening and closing like an umbrella, and are tumbled around by currents so may be sidewise or even upside down. They have short, trailing tentacles.

A search of reference books or the web will produce images of moon jellyfish that show varying amounts of pink coloration. These are images made in water less than 15 feet deep (about 4.5 meters), or in deeper water using artificial lighting, or are an artist's rendering using such images. Water at the depth of SharkCam, about 50 feet (about 15 meters) screens out all of the red and much of the orange portion of sunlight, leaving whatever colors the rest of the spectrum shows. This is why no moon jellyfish are pink on SharkCam.

Relative abundance*:* Rare - few records
Relative size: Small (10–20 cm or 4–8 in) to Medium (20 cm–0.5 m or 8–20 in)

Similar species: Nothing else seen on SharkCam resembles a moon jellyfish.

Additional information, web links, and contributions.
SharkCam video (1)

West Indian Sea Egg

***Tripneustes ventricosus* (Lamarck, 1816)**

Toxopneustidae

Distinguishing characteristics:
West Indian sea eggs are baseball-sized sea urchins covered with white spines that almost obscure the dark body. In natural lighting the sea egg body will show purple. A view of SharkCam bottom will usually show several individuals looking like stationary objects. They crawl around too slowly to see movement but a later return to the area will likely show them in different locations.

Relative abundance: Common - seen most visits in small numbers
Relative size: Very small (<10 cm or 4 in) to Small (10–20 cm or 4–8 in)

Similar species: Nothing else seen on SharkCam resembles a West Indian sea egg.

Additional information, web links, and contributions.
SharkCam video (1)

APPENDIX 1 – ADDITIONAL INFORMATION AND CONTRIBUTIONS

Alphabetical by common name

A

Common name: African Pompano
Scientific name: *Alectis ciliaris* (Bloch, 1787)
Family: Carangidae
Similar species: Crevalle Jack (*Caranx hippos*), Permit (*Trachinotus falcatus*)
SharkCam video: https://youtu.be/6DObF95BfhU
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/African_pompano
http://www.championbass.com/encyclopedia/african_pompano.html
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-John Rainey, cynde, jon-newbie; video-jon-newbie

Common name: Almaco Jack
Scientific name: *Seriola rivoliana* Valenciennes in Cuvier and Valenciennes, 1833
Family: Carangidae
Similar species: Greater Amberjack (*Seriola dumerili*)
SharkCam video: https://youtu.be/ssQENqUUOuE
Authentication: FishBase (mirror)
Additional information:
http://myfwc.com/wildlifehabitats/profiles/saltwater/jacks/greater-amberjack/
http://www.eregulations.com/florida/fishing/flsw13a/keys-to-identifying-the-jacks/
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Atlantic Bonito
Scientific name: *Sarda sarda* (Bloch, 1793)
Family: Scombridae
Similar species: Little Tunny (*Euthynnus alletteratus*)
SharkCam videos: https://youtu.be/4_yjJ5eQWUQ, https://youtu.be/qnnEuemL5o8
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Atlantic_bonito
http://www.stripersonline.com/surftalk/topic/297937-how-to-tell-apart-an-atlantic-bonito-from-a-false-albacore/
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Atlantic Spadefish
Scientific name: *Chaetodipterus faber* (Broussonet, 1782)
Family: Ephippidae
Similar species: Sheepshead (*Archosargus probatocephalus*)
SharkCam videos: https://youtu.be/m_t756QvxCc, https://youtu.be/9Dn5X5xdncY
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Atlantic_spadefish
http://reefguide.org/carib/spadefish.html
Credits: entry-Kyle Gallion; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, meryltje; video-jon-newbie

B

Common name: Banded Rudderfish
Scientific name: *Seriola zonata* (Mitchill, 1815)
Family: Carangidae
Similar species: Greater Amberjack (*Seriola dumerili*), Almaco Jack (*S. rivoliana*), Sergeant Major (*Abudefduf saxatilis*), Sheepshead (*Archosargus probatocephalus*), Atlantic Spadefish (*Chaetodipterus faber*)
SharkCam videos: https://youtu.be/tTai9IvzFUQ, https://youtu.be/sryj-YJyRyI
Authentication: FishBase (mirror)
Additional information:
http://www.safmc.net/FishIDandRegs/FishGallery/BandedRudderfish
http://nefsc.noaa.gov/publications/crd/crd1210/jacks.pdf
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-BetterThanWatchingWimbledon; video-jon-newbie

Common name: Bandtail Puffer
Scientific name: *Sphoeroides spengleri* (Bloch, 1785)
Family: Tetraodontidae
Similar species: Bluehead (*Thalassoma bifasciatum*), Clown Wrasse (*Halichoeres maculipinna*), Slippery Dick (*H. bivittatus*), Yellowhead Wrasse (*H. garnoti*)
SharkCam video: https://youtu.be/CHOKXgNpRWo
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/bandtailpuffer.html
http://www.snorkelstj.com/bandtail-pufferfish.html
Credits: entry-jon-newbie; editing-Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Bar Jack
Scientific name: *Caranx ruber* (Bloch, 1793)
Family: Carangidae
Similar species: Blue Runner (*Caranx crysos*), Horse-eye Jack (*Caranx latus*), Yellow Jack (*Carangoides bartholomaei*), Yellowtail Snapper (*Ocyurus chrysurus*)
SharkCam video: https://youtu.be/daBJSDat1dE
Authentication: FishBase (mirror)
Additional information:
https://en.m.wikipedia.org/wiki/Bar_jack
http://reefguide.org/carib/barjack.html

Credits: entry-Jordan Beckner; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Belted Sandfish
Scientific name: *Serranus subligarius* (Cope, 1870)
Family: Serranidae
Similar species: None
SharkCam video: https://youtu.be/DQ9a3kho4kE
Authentication: FishBase (mirror)
Additional information:
http://myfwc.com/research/saltwater/codes/marine-life-finfish/belted-sandfish-bass/
http://www.reefngom.org/beltsand.html
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-Erin Burge, jon-newbie; video-jon-newbie

Common name: Bermuda Chub
Scientific name: *Kyphosus sectatrix* (Linnaeus, 1758)
Family: Kyphosidae
Similar species: Spottail Pinfish (*Diplodus holbrookii*)
SharkCam videos: https://youtu.be/mJRSVrFjUt8, https://youtu.be/b2EpyRSRwA0
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Bermuda_chub
http://www.snorkelstj.com/chub.html
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-John Rainey, jon-newbie; video-jon-newbie

Common name: Bicolor Damselfish
Scientific name: *Stegastes partitus* (Poey, 1868)
Family: Pomacentridae
Similar species: Cocoa Damselfish (*Stegastes variabilis*)
SharkCam videos: https://youtu.be/kXkmsnr70vM, https://youtu.be/H4d8JkwIIBU, https://www.youtube.com/watch?v=GWzu7mEFTVI
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/bicolordamsel.html
http://eol.org/pages/203965/media
Credits: entry-jon-newbie; editing-Erin Burge; screen grab-jon-newbie; video-jon-newbie, Erin Burge

Common name: Bigeye Scad
Scientific name: *Selar crumenophthalmus* (Bloch, 1793)
Family: Carangidae
Similar species: Round Scad (*Decapterus punctatus*), Vermilion Snapper (*Rhomboplites aurorubens*), young Tomtate (*Haemulon aurolineatum*)
SharkCam video: https://youtu.be/6pMB0wZ4giM
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Bigeye_scad
http://eol.org/pages/215191/details

Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-meryltje, jon-newbie; video-jon-newbie

Common name: Black Sea Bass
Scientific name: *Centropristis striata* (Linnaeus, 1758)
Family: Serranidae
Similar species: Tautog (*Tautoga onitis*)
SharkCam videos: https://youtu.be/y3wGvomtAdU, https://youtu.be/JOHIOt4SCPU
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Black_sea_bass
http://www.asmfc.org/species/black-sea-bass
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen capture credit: jon-newbie, meryltje, John Rainey, Robin Lake; video-jon-newbie

Common name: Blue Angelfish
Scientific name: *Holacanthus bermudensis* Goode, 1876
Family: Pomacanthidae
Similar species: Queen Angelfish (*Holacanthus ciliaris*), Hogfish (*Lachnolaimus maximus*)
SharkCam video: https://youtu.be/Pz3-4IdDABw
Authentication: FishBase (mirror)
Additional information:
http://www.flmnh.ufl.edu/fish/gallery/descript/angelblue/angelblue.htm
https://en.wikipedia.org/wiki/Bermuda_blue_angelfish
http://reefguide.org/carib/blueangel.html
Credits: entry-Erin Burge; editing-jon-newbie; screen grab-Dillon King, meryltje, jon-newbie; video-jon-newbie

Common name: Blue Chromis
Scientific name: *Chromis cyanea* (Poey, 1860)
Family: Pomacentridae
Similar species: Juvenile Purple Reeffish (*Chromis scotti*)
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/bluechromis.html
http://www8.nos.noaa.gov/onms/park/Parks/SpeciesCard.aspx?refID=2&CreatureID=1352&pID=9
Credits: entry-jon-newbie; editing-Erin Burge; screen grab-jon-newbie

Common name: Blue Runner
Scientific name: *Caranx crysos* (Mitchill, 1815)
Family: Carangidae
Similar species: Bar Jack (*Caranx ruber*), Horse-eye Jack (*C. latus*), Yellow Jack (*Carangoides bartholomaei*), Yellowtail Snapper (*Ocyurus chrysurus*)
SharkCam video: https://youtu.be/8nmL1VBnhIw
Authentication: FishBase (mirror)
Additional information:
http://myfwc.com/wildlifehabitats/profiles/saltwater/jacks/blue-runner/
http://www.snorkelstj.com/blue-runner-jack.html

Appendix 1 – Additional information

Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-Erin Burge, cynde, jon-newbie; video-jon-newbie

Common name: Blue Tang (juvenile)
Scientific name: *Acanthurus coeruleus* Bloch and Schneider, 1801
Family: Acanthuridae
Similar species: Doctorfish (*Acanthurus chirurgus*), Ocean Surgeon (*A. tractus*), see Surgeonfishes (*Acanthurus* spp.)
Authentication: FishBase (mirror)
Additional information:
https://www.flmnh.ufl.edu/fish/Gallery/Descript/BlueTang/BlueTang.html
http://reefguide.org/carib/bluetang.html
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-meryltje, cynde, jon-newbie

Common name: Bluehead
Scientific name: *Thalassoma bifasciatum* (Bloch, 1791)
Family: Labridae
Similar species: Initial phase Puddingwife (*Halichoeres radiatus*), initial phase Slippery Dick (*H. bivittatus*)
SharkCam videos: https://youtu.be/OZSGeewjR2U, https://youtu.be/ipCL6chbtnI
Authentication: FishBase (mirror)
Additional information:
https://www.flmnh.ufl.edu/fish/discover/species-profiles/thalassoma-bifasciatum/
http://eol.org/pages/213331/media
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-Erin Burge, jon-newbie; video-jon-newbie

C
Common name: Caribbean Spiny Lobster
Scientific name: *Panulirus argus* (Latreille, 1804)
Family: Palinuridae
Similar species: None
SharkCam video: https://youtu.be/ldIbo8F14WA
Authentication: SeaLifeBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Panulirus_argus
http://marinebio.org/species.asp?id=155
http://reefguide.org/carib/lobster.html
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-OKI, jon-newbie; video-jon-newbie

Common name: Clown Wrasse
Scientific name: *Halichoeres maculipinna* (Müller and Troschel in Schomburgk, 1848)
Family: Labridae
Similar species: Bluehead (*Thalassoma bifasciatum*), Puddingwife (*Halichoeres radiatus*), Slippery Dick (*H. bivittatus*)
SharkCam videos: https://youtu.be/l_rLXpE_Zbs, https://youtu.be/VWcks5q5LLI
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/clownwrasse.html
http://www.kilili.com/kilili/uwss/slides/Halichoeres_maculipinna.html
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Cobia
Scientific name: *Rachycentron canadum* (Linnaeus, 1766)
Family: Rachycentridae
Similar species: Sharksucker (*Echneis naucrates*), Whitefin Sharksucker (*E. neucratoides*), Rainbow Runner (*Elagatis bipinnulata*), Greater Amberjack (*Seriola dumerili*)
SharkCam videos: https://youtu.be/np5gst6Oz7A, https://youtu.be/xEVt-O2izII
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Cobia
http://www.flmnh.ufl.edu/fish/gallery/descript/cobia/cobia.html
Credits: entry-Kyle Gallion; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, meryltje, OKI, cynde, jangsara; video-jon-newbie

Common name: Cocoa Damselfish
Scientific name: *Stegastes variabilis* (Castelnau, 1855)
Family: Pomacentridae
Similar species: Bicolor Damselfish (*Stegastes partitus*), Blue Angelfish (*Holacanthus bermudensis*), Queen Angelfish (*H. ciliaris*)
SharkCam videos: https://youtu.be/G-z6I0kUVKk, https://youtu.be/AXxkvl7RHkE
Authentication: FishBase (mirror)
Additional information: No good internet sources could be found for additional information about adult cocoa damselfish. Perhaps because they are more colorful, internet sources focus on juveniles, which have not been seen on SharkCam.
Credits: entry-Jordan Beckner; editing-jon-newbie and Erin Burge; screen grab-John Rainey, jon-newbie, meryltje; video-jon-newbie

Common name: Common Loon
Scientific name: *Gavia immer* (Brunnich, 1764)
Family: Gaviidae
Similar species: None
Authentication:
http://www.allaboutbirds.org/guide/common_loon/id
Additional information:
http://animals.nationalgeographic.com/animals/birds/common-loon/
https://www.audubon.org/field-guide/bird/common-loon
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-Ryan Bono

Common name: Common Octopus

Scientific name: *Octopus vulgaris* Cuvier, 1797
Family: Octopodidae
Similar species: None
SharkCam videos: https://youtu.be/KAKeIcHn2kY, https://youtu.be/XkCZ0JUpgIg
Authentication: SeaLifeBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Common_octopus
http://animals.nationalgeographic.com/animals/invertebrates/common-octopus/
http://reefguide.org/carib/commonoctopus.html
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Crevalle Jack
Scientific name: *Caranx hippos* (Linnaeus, 1766)
Family: Carangidae
Similar species: African Pompano *(Alectis ciliaris*), Permit (*Trachinotus falcatus*), Horse-eye Jack (*Caranx latus*)
SharkCam videos: https://youtu.be/l5SwqMgrenY, https://youtu.be/a5CNKGFuIoE
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Crevalle_jack
https://igfa.org/species/147-jack-crevalle.aspx?CommonName=147-jack-crevalle.aspx
http://myfwc.com/wildlifehabitats/profiles/saltwater/jacks/crevalle-jack/
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-Ryan Bono, pinebutte, meryltje, jon-newbie; video-jon-newbie

Common name: Cubbyu
Scientific name: *Pareques umbrosus* (Jordan and Eigenmann, 1889)
Family: Sciaenidae
Similar species: Whitespotted Soapfish (*Rypticus maculatus*)
SharkCam videos: https://youtu.be/FZzQ61kiZZg, https://www.youtube.com/watch?v=GWzu7mEFTVI
Authentication: FishBase (mirror)
Additional information:
http://eol.org/pages/211227/media
http://www.iucnredlist.org/details/47148229/0
Credits: entry-jon-newbie; editing-Erin Burge; screen grab-jon-newbie; video-jon-newbie, Erin Burge

Common name: Cubera Snapper
Scientific name: *Lutjanus cyanopterus* (Cuvier in Cuvier and Valenciennes, 1828)
Family: Lutjanidae
Similar species: Gag (*Mycteroperca microlepis*), Gray Snapper (*Lutjanus griseus*), Sheepshead (*Archosargus probatocephalus*)
SharkCam videos: https://youtu.be/XjJg9NzAlEY, https://youtu.be/yKLEQYwQEuQ
Authentication: FishBase (mirror)
Additional information:
https://www.flmnh.ufl.edu/fish/Gallery/Descript/CuberaSnapper/CuberaSnapper.html
http://animals.nationalgeographic.com/animals/fish/cubera-snapper/
Credits: entry-John Rainey and Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, meryltje, cynde; video-jon-newbie

D
Common name: Doctorfish
Scientific name: *Acanthurus chirurgus* (Bloch, 1787)
Family: Acanthuridae
Similar species: Adult Blue Tang (*Acanthurus coerleus*), Ocean Surgeon (*A. tractus*), see Surgeonfishes *Acanthurus* spp.
SharkCam video: https://youtu.be/ikIWFA26iqs
Authentication: FishBase (mirror)
Additional information:
https://www.flmnh.ufl.edu/fish/Gallery/Descript/DrFish/Doctor.htm
http://reefguide.org/carib/doctorfish.html
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, cynde, pinebutte; video-jon-newbie

E
F
Common name: French Angelfish
Scientific name*: Pomacanthus paru* (Bloch, 1787)
Family: Pomacanthidae
Similar species: Blue Angelfish (*Holacanthus bermudensis*), Queen Angelfish (*H. ciliaris*), Atlantic Spadefish (*Chaetodipterus faber*)
SharkCam video: https://youtu.be/p2uCzu-gXZM
Authentication: FishBase (mirror)
Additional information:
http://animal-world.com/encyclo/marine/angels/FrenchAngelfish.php
http://reefguide.org/carib/frenchangel.html
Credits: entry-Kyle Gallion; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

G
Common name: Gag
Scientific name: *Mycteroperca microlepis* (Goode and Bean, 1879)
Family: Serranidae
Similar species: Goliath Grouper (*Epinephelus itajara*), Scamp (*Mycteroperca phenax*), Cubera Snapper (*Lutjanus cyanopterus*)
SharkCam videos: https://youtu.be/4Ku5CLtU-a4, https://youtu.be/UKs3krWhQeA
Authentication: FishBase (mirror)
Additional information:
http://myfwc.com/wildlifehabitats/profiles/saltwater/grouper/gag-grouper/
http://www.seafoods.com/product/396-scamp-florida

Social interactions and their relationship to color and pattern are discussed in Gilmore and Jones (1992).
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-John Rainey, meryltje, jon-newbie; video-jon-newbie

Common name: Goliath Grouper
Scientific name: *Epinephelus itajara* (Lichtenstein, 1822)
Family: Serranidae
Similar species: Gag (*Mycteroperca microlepis*), Scamp (*M. phenax*), Cubera Snapper (*Lutjanus cyanopterus*)
SharkCam video: https://youtu.be/a7uqeX7XTqc
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Atlantic_goliath_grouper
http://www.flmnh.ufl.edu/fish/gallery/descript/goliathgrouper/goliathgrouper.html
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Gray Snapper
Alternate common name: Mangrove Snapper
Scientific name: *Lutjanus griseus* (Linnaeus, 1758)
Family: Lutjanidae
Similar species: Cubera Snapper (*Lutjanus cyanopterus*)
SharkCam videos: https://youtu.be/O9dHTTqh0IU, https://youtu.be/2Jk49L1q0AM
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/graysnapper.html
https://www.flmnh.ufl.edu/fish/discover/species-profiles/lutjanus-griseus
http://reefguide.org/carib/graysnapper.html
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Gray Triggerfish
Scientific name: *Balistes capriscus* Gmelin, 1789
Family: Balistidae
Similar species: None
SharkCam videos: https://youtu.be/P5qPFPh_nbY, https://youtu.be/mWlM9YGFkGE
Authentication: FishBase (mirror)
Additional information:
https://www.flmnh.ufl.edu/fish/discover/species-profiles/balistes-capriscus
http://myfwc.com/fishing/saltwater/recreational/triggerfish/
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Great Barracuda
Scientific name: *Sphyraena barracuda* (Edwards in Catesby, 1771)
Family: Sphyraenidae
Similar species: None
SharkCam video: https://youtu.be/J3NMOJ9FIJw
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/barracuda.html
https://www.flmnh.ufl.edu/fish/discover/species-profiles/sphyraena-barracuda/
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-Ryan Bono, meryltje, jon-newbie; video-jon-newbie

Common name: Greater Amberjack
Scientific name: *Seriola dumerili* (Risso, 1810)
Family: Carangidae
Similar species: Almaco Jack (*Seriola rivoliana*)
SharkCam video: https://youtu.be/vXDznChmUY0
Authentication: FishBase (mirror)
Additional information:
http://myfwc.com/wildlifehabitats/profiles/saltwater/jacks/almaco-jack/
http://www.eregulations.com/florida/fishing/flsw13a/keys-to-identifying-the-jacks/
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-John Rainey, meryltje, jon-newbie; video-jon-newbie

Common name: Green Moray
Scientific name: *Gymnothorax funebris* Ranzani, 1839
Family: Muraenidae
Similar species: Spotted Moray (*Gymnothorax moringa*), Sharptail Eel (*Myrichthys breviceps*)
SharkCam video: https://youtu.be/wItXfb58KXE
Authentication: FishBase (mirror)
Additional information:
https://www.flmnh.ufl.edu/fish/discover/species-profiles/gymnothorax-funebris
https://sublimecreatures.wordpress.com/2012/08/08/the-not-so-green-moray-eel/
Credits: entry-jon-newbie; editing-Erin Burge; screen grab-jon-newbie; video-jon-newbie

H
Common name: Harlequin Bass
Scientific name: *Serranus tigrinus* (Bloch, 1790)
Family: Serranidae
Similar species: None
Authentication: FishBase (mirror)
Additional information:
http://www.aquariumdomain.com/viewSpeciesMarine.php?id=108
http://reefguide.org/carib/harlequinbass.html
http://www.snorkelstj.com/harleguin-bass.html
Credits: entry-Randy Fink; editing-jon-newbie and Erin Burge; screen grab-jon-newbie

Common name: Hogfish
Scientific name: *Lachnolaimus maximus* (Walbaum, 1792)
Family: Labridae
Similar species: Blue Angelfish (*Holacanthus bermudensis*), Queen Angelfish (*H. ciliaris*)

SharkCam Fishes

SharkCam videos: https://youtu.be/Q1T4wg20ZoU, https://youtu.be/ybSZuW01ldI
Authentication: FishBase (mirror)
Additional information:
https://www.flmnh.ufl.edu/fish/Gallery/Descript/Hogfish/Hogfish.html
http://reefguide.org/carib/hogfish.html
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, meryltje, BearBell; video-jon-newbie

Common name: Horse-eye Jack
Scientific name: *Caranx latus* Agassiz in Spix and Agassiz, 1831
Family: Carangidae
Similar species: Blue Runner (*Caranx crysos*), Bar Jack (*C. ruber*), Yellow Jack (*Carangoides bartholomaei*), Yellowtail Snapper (*Ocyurus chrysurus*), Vermilion Snapper (*Rhomboplites aurorubens*)
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Horse-eye_jack
http://reefguide.org/carib/horseeyejack.htmlhttps://igfa.org/species/148-jack-horse-eye.aspx?CommonName=148-jack-horse-eye.aspx
Credits: entry-Kyle Gallion; editing-jon-newbie and Erin Burge; screen grab-jon-newbie

Common name: Human (Freediver and Scuba Diver)
Scientific name: *Homo sapiens* "*aquaticus*" and *H. sapiens* "*scubica*"
Family: Hominidae
Similar species: None
SharkCam video: https://youtu.be/CGAGeJd-1jc
Additional information:
https://en.wikipedia.org/wiki/Scuba_diving
https://en.wikipedia.org/wiki/Freediving
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie

I
J
K
Common name: Knobbed Porgy
Scientific name: *Calamus nodosus* Randall and Caldwell, 1966
Family: Sparidae
Similar species: Red Porgy (*Pagrus pagrus*), Saucereye Porgy (*Calamus calamus*), White Grunt (*Haemulon plumierii*)
SharkCam video: https://youtu.be/tUPi11OgJR4
Authentication: FishBase
Additional information:
http://myfwc.com/wildlifehabitats/profiles/saltwater/porgy/knobbed-porgy/
http://eol.org/pages/211202/overview
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-cynde, jon-newbie; video-jon-newbie

L
Common Name: Little Tunny
Alternate common names: False Albacore, Little Tuna, Bonita, Albie
Scientific Name: *Euthynnus alletteratus* (Rafinesque, 1810)
Family: Scombridae
Similar species: Atlantic Bonito (*Sarda sarda*)
SharkCam videos: https://youtu.be/a2-8OHFyTvc, https://youtu.be/B3CJtj7YNUM
Authentication: FishBase (mirror)
Additional information:
http://www.flmnh.ufl.edu/fish/gallery/descript/littletunny/littletunny.html\
https://en.wikipedia.org/wiki/Little_tunny
http://www.stripersonline.com/surftalk/topic/297937-how-to-tell-apart-an-atlantic-bonito-from-a-false-albacore/
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-Christine Casterline, jon-newbie, OKI; video-jon-newbie

Common name: Loggerhead Sea Turtle
Scientific name: *Caretta caretta* (Linnaeus, 1758)
Family: Cheloniidae
Similar species: None
SharkCam videos: https://youtu.be/jdioHXAeRsI, https://youtu.be/uXpiSq0uKPU
Authentication: SeaLifeBase (mirror)
Additional information:
http://www.ncwildlife.org/Portals/0/Conserving/documents/FactSheets/nongame_seaturtle_hires.pdf
http://www.fws.gov/northflorida/seaturtles/turtle%20factsheets/loggerhead-sea-turtle.htm
http://www.nmfs.noaa.gov/pr/species/turtles/loggerhead.htm
Credits: entry-Randy Fink; editing-jon-newbie and Erin Burge; screen grab-Jim, jon-newbie, OKI, Erin Burge, cynde; video-jon-newbie

M
Common name: Moon Jelly
Scientific name: *Aurelia aurita* (Linnaeus, 1758)
Family: Ulmaridae
Similar species: None
SharkCam video: https://youtu.be/vXFaZByVKDg
Authentication: SeaLifeBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Aurelia_aurita
http://reefguide.org/carib/moonjelly.html
Credits: entry-Kyle Gallion; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, OKI; video-jon-newbie

N
Common name: Nurse Shark

Appendix 1 – Additional information

Scientific name: *Ginglymostoma cirratum* (Bonnaterre, 1788)
Family: Ginglymostomatidae
Similar species: Sandbar Shark (*Carcharhinus plumbeus*), Sand Tiger Shark (*Carcharias taurus*)
SharkCam videos: https://youtu.be/ridzanZk0is, https://youtu.be/9Ek0UUkygAw
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/nurseshark.html
http://www.flmnh.ufl.edu/fish/gallery/descript/nurseshark/nurseshark.htm
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

O
Common name: Ocean Surgeon
Scientific name: *Acanthurus tractus* Poey, 1860
Family: Acanthuridae
Similar species: Adult Blue Tang (*A. coeruleus*), Doctorfish (*A. chirurgus*), see Surgeonfishes (*Acanthurus* spp.)
Authentication: http://www.mapress.com/zootaxa/2011/f/zt02905p068.pdf
Additional information:
http://reefguide.org/carib/surgeonfish.html
http://species-identification.org/species.php?species_group=caribbean_diving_guide&id=207

Common name: Orangespotted Filefish
Scientific name: *Cantherhines pullus* (Ranzani, 1842)
Family: Monacanthidae
Similar species: Scrawled Filefish *(Aluterus scriptus*)
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/orangespottedfile.html
http://www.snorkelstj.com/orangespotted-filefish.html
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-jon-newbie

P
Common name: Permit
Scientific name: *Trachinotus falcatus* (Linnaeus, 1758)
Family: Carangidae
Similar species: African Pompano (*Alectis ciliaris*), Crevalle Jack (*Caranx hippos*), Horse-eye Jack (*C. latus*)
SharkCam video: https://youtu.be/TY6fvZ1wk9Y
Authentication: FishBase (mirror)
Additional information:
http://www.flmnh.ufl.edu/fish/gallery/Descript/permit/permit.html
https://en.wikipedia.org/wiki/Permit_(fish)
SharkCam video: https://www.youtube.com/watch?v=S8zXrTQvjuE
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, meryltje; video-jon-newbie

Common name: Puddingwife
Scientific name: *Halichoeres radiatus* (Linnaeus, 1758)
Family: Labridae
Similar species: Bluehead (*Thalassoma bifasciatum*)
SharkCam videos: https://youtu.be/LWnsTMaykh8, https://youtu.be/dcnWD6sX3aQ
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/puddingwife.html
http://www.snorkelstj.com/puddingwife.html
Credits: entry-Randy Fink; editing-jon-newbie and Erin Burge; screen grab-meryltje, jon-newbie; video-jon-newbie

Common name: Purple Reeffish
Scientific name: *Chromis scott*i Emery, 1968
Family: Pomacentridae
Similar species: Cocoa Damselfish (*Stegastes variabilis*), adult Blue Tang (*Acanthurus coeruleus*), Blue Chromis (*Chromis cyanea*)
SharkCam videos: https://youtu.be/ZO5NS1Ox1Uw, https://youtu.be/Ys5UAO-BEXU
Authentication: FishBase (mirror)
Additional information: No additional good internet sources found.
Credits: entry-jon-newbie; editing-Erin Burge; screen grab-jon-newbie; video-jon-newbie

Q
Common name: Queen Angelfish
Scientific name: *Holacanthus ciliaris* (Linnaeus, 1758)
Family: Pomacanthidae
Similar species: Blue Angelfish (*Holacanthus bermudensis*), Hogfish (*Lachnolaimus maximus*)
SharkCam videos: https://youtu.be/wK7kBBEY4b4, https://youtu.be/Xv3yz5eVjjs
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Queen_angelfish
http://reefguide.org/carib/queenangel.html
Credits: entry-Kyle Gallion; editing-jon-newbie and Erin Burge; screen grab-Christine Casterline, jon-newbie; video-jon-newbie

R
Common name: Rainbow Runner
Scientific name: *Elagatis bipinnulata* (Quoy and Gaimard, 1825)
Family: Carangidae
Similar Species: Cobia (*Rachycentron canadum*), Yellowtail Snapper (*Ocyurus chrysurus*)
SharkCam video: https://youtu.be/Jh2IWLoA1zc
Authentication: FishBase (mirror)
Additional information:
http://www.fao.org/fishery/species/3122/en
http://myfwc.com/fishing/saltwater/recreational/cobia/
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, OKI; video-jon-newbie

SharkCam Fishes

Common name: Red Lionfish
Scientific name: *Pterois volitans* (Linnaeus, 1758)*
Family: Scorpaenidae
Similar species: None. Another species of invasive lionfish, *Pterois miles*, also occurs at very low frequencies in North Carolina waters. *Pterois volitans* and *P. miles* are visually indistinguishable and most researchers do not attempt to separate them within the invasive range.
Note: Two lionfish have been seen on SharkCam. One was removed from the camera view on 27 December 2015. Please report any sightings of red lionfish on the SharkCam forum. Be sure to include the date and time of observation.
Authentication: FishBase (mirror)
Additional information:
http://www.flmnh.ufl.edu/fish/gallery/descript/redlionfish/rlionfish.html
http://nas.er.usgs.gov/queries/factsheet.aspx?speciesid=963
Credits: entry-Randy Fink; editing-jon-newbie and Erin Burge; screengrab: Erin Burge, OKI, jon-newbie

Common name: Red Porgy
Scientific name: *Pagrus pagrus* (Linnaeus, 1758)
Family: Sparidae
Similar Species: Knobbed Porgy (*Calamus nodosus*), Saucereye Porgy (*C. calamus*)
SharkCam video: https://youtu.be/ZxJaCnQKvh4
Authentication: FishBase (mirror)
Additional information:
http://myfwc.com/wildlifehabitats/profiles/saltwater/porgy/red-porgy/
http://www.safmc.net/FishIDandRegs/FishGallery/RedPorgy
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Redband Parrotfish
Scientific name: *Sparisoma aurofrenatum* (Valenciennes in Cuvier and Valenciennes, 1840)
Family: Scaridae
Similar species: Stoplight Parrotfish (*Sparisoma viride*), Yellowtail Parrotfish (*Sparisoma rubripinne*)
SharkCam videos: https://youtu.be/TLPQjaZY-uo, https://youtu.be/uycyQzXCztU, https://youtu.be/_I_3y-XyMuA, https://youtu.be/hD2amYCZJlY
Authentication: FishBase (mirror)
Additional information:
http://species-identification.org/species.php?species_group=caribbean_diving_guide&id=252
http://reefguide.org/carib/redbandparrot.html
Credits: entry-Kyle Gallion; editing-jon-newbie and Erin Burge; screen grab-Erin Burge, jon-newbie, meryltje, cheri-herald; video-jon-newbie

Common name: Round Scad
Scientific name: *Decapterus punctatus* (Cuvier, 1829)
Family: Carangidae
Similar species: Bigeye Scad (*Selar crumenophthalmus*), Yellowtail Snapper (*Ocyurus chrysurus*), young Tomtate (*Haemulon aurolineatum*)
SharkCam video: https://youtu.be/7_i8hoQXeAU
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Round_scad
http://eol.org/pages/205453/overview
Credits: entry-Jordan Beckner; editing-jon-newbie and Erin Burge; screen grab-John Rainey; video-jon-newbie

S
Common name: Saddled Blenny
Scientific name: *Malacoctenus triangulatus* Springer, 1959
Family: Labrisomidae
Similar species: None
SharkCam video: https://youtu.be/qk_XLdLxTaQ
Authentication: FishBase (mirror)
Additional information:
http://www.snorkelstj.com/saddled-blenny.html
http://eol.org/pages/207875/overview
Credits: entry-Randy Fink; editing-jon-newbie and Erin Burge; screen grab-Erin Burge, cynde, jon-newbie; video-jon-newbie

Common name: Sand Tiger Shark
Scientific name: *Carcharias taurus* Rafinesque, 1810
Family: Odontaspididae
Similar species: Sandbar Shark (*Carcharhinus plumbeus*), Nurse Shark (*Ginglymostoma cirratum*)
SharkCam videos: https://youtu.be/DNJF2kHte9s, https://youtu.be/a09rcDVNdas
Authentication: FishBase (mirror)
Additional information:
http://animals.nationalgeographic.com/animals/fish/sandtiger-shark.html
http://www.flmnh.ufl.edu/fish/gallery/descript/sandtiger/sandtiger.html
https://en.wikipedia.org/wiki/Sand_tiger_shark
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-Ryan Bono, meryltje, jon-newbie; video-jon-newbie

Common Name: Sandbar Shark
Scientific Name: *Carcharhinus plumbeus* (Nardo, 1827)
Family: Carcharhinidae
Similar species: Sand Tiger Shark (*Carcharias taurus*), Nurse Shark (*Ginglymostoma cirratum*)
SharkCam videos: https://youtu.be/uohc_PkWc-g, https://youtu.be/FIczhOoVQnI
Authentication: FishBase (mirror)
Additional information:
http://www.flmnh.ufl.edu/fish/gallery/descript/sandbarshark/sandbarshark.htm
https://en.wikipedia.org/wiki/Sandbar_shark

Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-Christine Casterline, jon-newbie, meryltje; video-jon-newbie

Common name: Saucereye Porgy
Scientific name: *Calamus calamus* (Valenciennes in Cuvier and Valenciennes, 1830)
Family: Sparidae
Similar species: Knobbed Porgy (*Calamus nodosus*), Red Porgy (*Pagrus pagrus*)
SharkCam videos: https://youtu.be/hyt_3hfe4ks, https://youtu.be/i5iSK-08wQM, https://www.youtube.com/watch?v=GWzu7mEFTVI
Authentication: FishBase (mirror)
Additional information:
http://eol.org/pages/213698/overview
http://safmc.net/FishIDandRegs/FishGallery/SaucereyePorgy
Credits: entry-jon-newbie; editing-Erin Burge; screen grab-jon-newbie; video-jon-newbie, Erin Burge

Common name: Scamp
Scientific name: *Mycteroperca phenax* Jordan and Swain, 1884
Family: Serranidae
Similar species: Gag (*Mycteroperca microlepis*), Goliath Grouper (*Epinephelus itajara*), Cubera Snapper (*Lutjanus cyanopterus*)
SharkCam videos: https://youtu.be/pVSNAk9CxtY, https://youtu.be/ymkaQXvyR_M, https://youtu.be/T2KtkG3cRtA
Authentication: FishBase (mirror)
Additional information:
http://myfwc.com/wildlifehabitats/profiles/saltwater/grouper/scamp/
https://en.wikipedia.org/wiki/Scamp_grouper
Social interactions and their relationship to color and pattern are discussed in Gilmore and Jones (1992).
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, meryltje, OKI, John Rainey; video-jon-newbie

Common name: Scrawled Filefish
Scientific name: *Aluterus scriptus* (Osbeck, 1765)
Family: Monacanthidae
Similar species: Orangespotted Filefish (*Cantherhines pullus*)
SharkCam videos: https://youtu.be/TpNkqc9b1HQ, https://youtu.be/MobFDeGo0lg
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Aluterus_scriptus
https://www.flmnh.ufl.edu/fish/Gallery/Descript/ScrawledFilefish/ScrawledFilefish.html
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, cynde, meryltje; video-jon-newbie

Common name: Sergeant Major
Scientific name: *Abudefduf saxatilis* (Linnaeus, 1758)
Family: Pomacentridae
Similar species: Sheepshead (*Archosargus probatocephalus*), juvenile Banded Rudderfish (*Seriola zonata*), Atlantic Spadefish (*Chaetodipterus faber*)
SharkCam video: https://youtu.be/8xsbh-K1zRk
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/sergeantmajor.html
http://www.sms.si.edu/irlspec/Abudefduf_saxatilis.htm
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-Ryan Bono, jon-newbie; video-jon-newbie

Common name: Sharksucker
Scientific name: *Echeneis naucrates* Linnaeus, 1758
Family: Echeneidae
Similar species: Whitefin Sharksucker (*Echeneis neucratoides*), juvenile Cobia (*Rachycentron canadum*)
SharkCam videos: https://youtu.be/LW6sX2EDzes, https://youtu.be/_3i5JFpfNkA
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/sharksucker.html
https://www.flmnh.ufl.edu/fish/Gallery/Descript/LiveSharksucker/LiveSharksucker.html
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Sharpnose Puffer
Scientific name: *Canthigaster rostrata* (Bloch, 1786)
Family: Tetraodontidae
Similar species: None
SharkCam videos: https://youtu.be/Z2XHKVPELFE, https://youtu.be/1F-LUFlM9rs
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/sharpnosepuffer.html
http://www.snorkelstj.com/sharpnose-pufferfish.html
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Sharptail Eel
Scientific name: *Myrichthys breviceps* (Richardson, 1848)
Family: Ophichthidae
Similar species: Green Moray (*Gymnothorax funebris*), Spotted Moray (*G. moringa*)
SharkCam video: https://youtu.be/ejgBIfmL3To
Authentication: FishBase (mirror)
Additional information:
http://species-identification.org/species.php?species_group=caribbean_diving_guide&id=155
https://daniellesdives.wordpress.com/2012/04/29/creature-feature-sharptail-eel/
Credits: entry-jon-newbie; editing-Erin Burge; screen grab-Pine Butte, jon-newbie; video-jon-newbie

Common name: Sheepshead
Scientific name: *Archosargus probatocephalus* (Walbaum, 1792)
Family: Sparidae
Similar species: Sergeant Major (*Abudefduf saxatilis*), Atlantic Spadefish (*Chaetodipterus faber*), juvenile Banded Rudderfish (*Seriola zonata*)
SharkCam video: https://youtu.be/YTHdk4G3NZA
Authentication: FishBase (mirror)
Additional information:
http://www.flmnh.ufl.edu/fish/gallery/descript/sheepshead/sheepshead.html
http://myfwc.com/fishing/saltwater/recreational/sheepshead/
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-John Rainey, meryltje, jon-newbie; video-jon-newbie

Common name: Slippery Dick
Scientific name: *Halichoeres bivittatus* (Bloch, 1791)
Family: Labridae
Similar species: Bluehead (*Thalassoma bifasciatum*), Puddingwife (*Halichoeres radiatus*)
SharkCam videos: https://youtu.be/77iIGHxlcbI, https://www.youtube.com/watch?v=GWzu7mEFTVI
Authentication: FishBase (mirror)
Additional information:
http://www.boldsystems.org/index.php/Taxbrowser_Taxonpage?taxid=24973
http://eol.org/pages/220796/media
Credits: entry-jon-newbie; screen grab-jon-newbie, meryltje; video-jon-newbie, Erin Burge

Common name: Southern Stingray
Scientific name: *Dasyatis americana* Hildebrand and Schroeder, 1928
Family: Dasyatidae
Similar species: None
SharkCam videos: https://youtu.be/BzRw65lDhaw, https://youtu.be/lL0wzitk2UQ
Authentication: FishBase (mirror)
Additional information:
https://www.flmnh.ufl.edu/fish/Gallery/Descript/SouthernStingray/SouthernStingray.html
https://en.wikipedia.org/wiki/Southern_stingray
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, meryltje; video-jon-newbie

Common name: Spanish Hogfish
Scientific name: *Bodianus rufus* (Linnaeus, 1758)
Family: Labridae
Similar species: Spotfin Hogfish (*Bodianus pulchellus*)
Authentication: FishBase (mirror)
Additional Information:
https://en.wikipedia.org/wiki/Spanish_hogfish
http://eol.org/pages/212988/media
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-Samantha Lungari, meryltje, jon-newbie

Common name: Spotfin Butterflyfish
Scientific name: *Chaetodon ocellatus* Bloch, 1787
Family: Chaetodontidae
Similar species: None
SharkCam video: https://youtu.be/VF8SzLK3LeU
Authentication: FishBase (mirror)
Additional information:
http://www.flmnh.ufl.edu/fish/gallery/descript/spotfin/spotfin.html
http://reefguide.org/carib/spotfinbutter.html
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Spotfin Hogfish
Scientific name: *Bodianus pulchellus* (Poey, 1860)
Family: Labridae
Similar species: Spanish Hogfish (*Bodianus rufus*)
SharkCam videos: https://youtu.be/kYLMjJ2QbR8, https://youtu.be/prFhO-98A-I
Authentication: FishBase (mirror)
Additional information:
http://eol.org/pages/212987/media
https://www.georgiaaquarium.org/animal-guide/georgia-aquarium/home/galleries/ocean-voyager/gallery-animals/spotfin-hogfish
Credits: entry-Randy Fink; editing-jon-newbie and Erin Burge; screen grab-meryltje, jon-newbie; video-jon-newbie

Common name: Spottail Pinfish
Scientific name: *Diplodus holbrookii* (Bean, 1878)
Family: Sparidae
Similar species: Tomtate (*Haemulon aurolineatum*), Bermuda Chub (*Kyphosus sectatrix*)
SharkCam video: https://youtu.be/eKzO1ymc2vc
Authentication: FishBase (mirror)
Additional information:
http://www.marinefishesofgeorgia.org/reef-fish/spottail-pinfish.html
http://www.wilmingtondiving.com/spottailpinfish.shtml
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-John Rainey; video-jon-newbie

Common name: Spotted Goatfish
Scientific name: *Pseudupeneus maculatus* (Bloch, 1793)
Family: Mullidae
Similar species: None
SharkCam videos: https://youtu.be/8J9ivo9lxr4, https://www.youtube.com/watch?v=GWzu7mEFTVI
Authentication: FishBase (mirror)
Additional information:
http://www.eoearth.org/view/article/156224/
http://reefguide.org/carib/spottedgoat.html

Appendix 1 – Additional information

Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie; video-jon-newbie, Erin Burge

Common name: Spotted Moray
Scientific name: *Gymnothorax moringa* (Cuvier, 1829)
Family: Muraenidae
Similar species: Green Moray (*Gymnothorax funebris*), Sharptail Eel (*Myrichthys breviceps*)
SharkCam videos: https://youtu.be/Xi7l4n56yUs, https://www.youtube.com/watch?v=GWzu7mEFTVI
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/spottedmoray.html
http://www.snorkelstj.com/spotted-moray-eel.html
Credits: entry-jon-newbie; editing-Erin Burge; screen grab-jon-newbie; video-jon-newbie, Erin Burge

Common name: Spotted Scorpionfish
Scientific name: *Scorpaena plumieri* Bloch, 1789
Family: Scorpaenidae
Similar species: None
SharkCam videos: https://youtu.be/PTW7LiFMSfQ, https://youtu.be/Dzk19XvuBC8
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/scorpion.html
https://www.flmnh.ufl.edu/fish/discover/species-profiles/scorpaena-plumieri/
Credits: entry-jon-newbie; editing-Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Squirrelfish
Scientific name: *Holocentrus adscensionis* (Osbeck, 1765)
Family: Holocentridae
Similar species: None
Authentication: FishBase (mirror)
Additional information:
http://www.flmnh.ufl.edu/fish/gallery/descript/squirrelfish/squirrelfish.html
https://en.wikipedia.org/wiki/Holocentrus_adscensionis
Credits: entry-Christopher O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie

Common name: Stoplight Parrotfish
Scientific name: *Sparisoma viride* (Bonnaterre, 1788)
Family: Scaridae
Similar species: Redband Parrotfish (*Sparisoma aurofrenatum*), Yellowtail Parrotfish (*S. rubripinne*)
Authentication: FishBase (mirror)
Additional information:
https://www.flmnh.ufl.edu/fish/Gallery/Descript/SParrotfish/SParrotfish.html
http://www.snorkelstj.com/stoplight-parrotfish.html
Credits: entry-Randy Fink; editing-jon-newbie and Erin Burge; screen grab-pine-butte, jon-newbie

Common name: Striped Grunt
Scientific name: *Haemulon striatum* (Linnaeus, 1758)
Family: Haemulidae
Similar species: Tomtate (*Haemulon aurolineatum*)
SharkCam videos: https://youtu.be/ZQPXIrCgVEk, https://youtu.be/Mtf3PXq1ORw
Authentication: FishBase (mirror)
Additional information:
http://biogeodb.stri.si.edu/caribbean/en/thefishes/species/3729
http://www.fishdb.co.uk/findpicture.php?exact=true&picid=2359
Credits: entry-jon-newbie; editing-Erin Burge; screen grab-jon-newbie; video-jon-newbie

Common name: Surgeonfishes
Scientific name: *Acanthurus* spp.
Family: Acanthuridae
Similar species: Adult Blue Tang (*Acanthurus coeruleus*), Doctorfish (*A. chirurgus*), Ocean Surgeon (*A. tractus*). Reference books and online resources have historically used the scientific name *Acanthurus bahianus* for the entire geographic range of the ocean surgeon. It was recently proposed that the northwestern Atlantic *A. bahianus* is actually *A. tractus*, and that *A. bahianus* be reserved for the Brazilian populations of the ocean surgeon.
SharkCam video: https://youtu.be/AxdPr1oVzbo
Authentication:
Blue tang, FishBase (mirror)
Doctorfish, FishBase (mirror)
Ocean surgeon, http://www.marinespecies.org/aphia.php?p=taxdetails&id=301914 http://www.mapress.com/zootaxa/2011/f/zt02905p068.pdf
Additional information:
Blue tang, http://reefguide.org/carib/bluetang.html http://species-identification.org/species.php?species_group=caribbean_diving_guide&id=208
Doctorfish, http://reefguide.org/carib/doctorfish.html http://species-identification.org/species.php?species_group=caribbean_diving_guide&id=209
Ocean surgeon, http://www.mapress.com/zootaxa/2011/f/zt02905p068.pdf for discussion of the differences between *Acanthurus tractus* and *A. bahianus*, http://reefguide.org/carib/surgeonfish.html http://species-identification.org/species.php?species_group=caribbean_diving_guide&id=207
Credits: entry-jon-newbie; editing-Erin Burge; screen grab-jon-newbie; video-jon-newbie

T

Common name: Tautog
Scientific name: *Tautoga onitis* (Linnaeus, 1758)
Family: Labridae
Similar species: Black Sea Bass (*Centropristis striata*)

SharkCam videos: https://youtu.be/upxDjQBqzD0, https://youtu.be/tWYN_k8REok
Authentication: FishBase (mirror)
Additional information:
http://www.mass.gov/eea/agencies/dfg/dmf/recreational-fishing/species-profiles-tautog.html
http://www.saltwatersportsman.com/species/fish-species/tips-catching-trophy-tog
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-John Rainey, cynde, jon-newbie; video-jon-newbie

Common name: Tomtate
Scientific name: *Haemulon aurolineatum* Cuvier in Cuvier and Valenciennes, 1830
Family: Haemulidae
Similar Species: Spottail Pinfish (*Diplodus holbrookii*), Striped Grunt (*Haemulon striatum*), Bigeye Scad (*Selar crumenophthalmus*), Round Scad (*Decapterus punctatus*)
SharkCam video: https://youtu.be/--IyoDD8oW4
Authentication: FishBase (mirror)
Additional information:
http://www.sms.si.edu/irlspec/Haemul_auroli.htm
http://www.dto.com/swfishing/speciesProfile/487
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-John Rainey, jon-newbie; video-jon-newbie

U
V
Common name: Vermilion Snapper
Scientific name: *Rhomboplites aurorubens* (Cuvier in Cuvier and Valenciennes, 1829)
Family: Lutjanidae
Similar species: Bigeye Scad (*Selar crumenophthalmus*)
SharkCam video: https://youtu.be/l3RxV7fYnVE
Authentication: FishBase (mirror)
Additional information:
http://myfwc.com/wildlifehabitats/profiles/saltwater/snapper/vermilion-snapper/
Guide to South Carolina Saltwater Fishes, page 76, http://saltwaterfishing.sc.gov/pdf/SaltwaterFishPocketGuide.pdf
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, meryltje, SusannMesna; video-jon-newbie

W
Common name: West Indian Sea Egg
Scientific name: *Tripneustes ventricosus* (Lamarck, 1816)
Family: Toxopneustidae
Similar species: None
SharkCam video: https://youtu.be/CGAGeJd-1jc
Authentication: SeaLifeBase
https://en.wikipedia.org/wiki/Tripneustes_ventricosus
Additional information:
http://species-identification.org/species.php?species_group=caribbean_diving_guide&id=386
http://reefguide.org/carib/westindianseaegg.html
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, UWStig; video-jon-newbie, UWStig

Common name: White Grunt
Scientific name: *Haemulon plumierii* (Lacepède, 1801)
Family: Haemulidae
Similar species: Knobbed Porgy (*Calamus nodosus*)
SharkCam videos: https://youtu.be/5vQBoSqkVVw, https://www.youtube.com/watch?v=GWzu7mEFTVI
Authentication: FishBase (mirror)
Additional information:
http://myfwc.com/wildlifehabitats/profiles/saltwater/white-grunt/
https://en.wikipedia.org/wiki/Haemulon_plumierii
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, cynde, OKI; video-jon-newbie, Erin Burge

Common name: Whitefin Sharksucker
Scientific name: *Echeneis neucratoides* Zuiew, 1789
Family: Echeneidae
Similar species: Sharksucker (*Echeneis naucrates*), juvenile Cobia (*Rachycentron canadum*)
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/whitefinsharksucker.html
http://www.iucnredlist.org/details/16440083/0
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-jon-newbie

Common name: Whitespotted Soapfish
Scientific name: *Rypticus maculatus* Holbrook, 1855
Family: Serranidae
Similar species: Cubbyu (*Pareques umbrosus*)
SharkCam videos: https://youtu.be/9IMc7l-gwxY, https://youtu.be/fzpsBdp4pqg, https://www.youtube.com/watch?v=GWzu7mEFTVI
Authentication: FishBase (mirror)
Additional information:
http://www.wilmingtondiving.com/whitespotsoap.shtml
http://biogeodb.stri.si.edu/caribbean/resources/img/images/species/3540_1252.jpg
Credits: entry-Christopher O'Brien; editing-jon-newbie and Erin Burge; screen grab-Erin Burge, jon-newbie; video-jon-newbie, Erin Burge

X
Y
Common name: Yellow Jack
Scientific name: *Carangoides bartholomaei* (Cuvier in Cuvier and Valenciennes, 1833)
Family: Carangidae

Similar species: Horse-eye Jack (*Caranx latus*), Blue Runner (*C. crysos*), Bar Jack (*C. ruber*), Yellowtail Snapper (*Ocyurus chrysurus*)
SharkCam video: https://youtu.be/efGxoc9yAK4
Authentication: FishBase (mirror)
Additional information:
https://en.wikipedia.org/wiki/Yellow_jack
https://www.flmnh.ufl.edu/fish/discover/species-profiles/carangoides-bartholomaei/
Credits: entry-Chris O'Brien; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, meryltje; video-jon-newbie

Common name: Yellowhead Wrasse
Scientific name: *Halichoeres garnoti* (Valenciennes in Cuvier and Valenciennes, 1839)
Family: Labridae
Similar species: None
Authentication: FishBase (mirror)
Additional information:
http://www.eoearth.org/view/article/157184/
http://reefguide.org/carib/yellowheadwrasse.html
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screengrab credit: jon-newbie, lingo13

Common name: Yellowtail Parrotfish
Scientific name: *Sparisoma rubripinne* (Valenciennes in Cuvier and Valenciennes, 1840)
Family: Scaridae
Similar species: Redband Parrotfish (*Sparisoma aurofrenatum*)
SharkCam videos: https://youtu.be/68Z8E5eXCsE, https://youtu.be/MFcSRBRT1pc
Authentication: FishBase (mirror)
Additional information:
http://reefguide.org/carib/yellowtailparrot.html
http://www.snorkelstj.com/redfin-yellowtail-parrotfish.html
Credits: entry-Randy Fink; editing-jon-newbie and Erin Burge; screengrab: Erin Burge, jon-newbie, meryltje, tis-me; video-jon-newbie

Common name: Yellowtail Snapper
Scientific name: *Ocyurus chrysurus* (Bloch, 1791)
Family: Lutjanidae
Similar species: Horse-eye Jack (*Caranx latus*), Yellow Jack (*Carangoides bartholomaei*)
SharkCam video: https://youtu.be/YUkxORmZuPM
Authentication: FishBase (mirror)
Additional information:
http://www.flmnh.ufl.edu/fish/gallery/descript/yellowtailsnapper/yellowtailsnapper.html
https://en.wikipedia.org/wiki/Yellowtail_snapper
Credits: entry-John Rainey; editing-jon-newbie and Erin Burge; screen grab-jon-newbie, meryltje, pinebutte; video-jon-newbie

Z

APPENDIX 2 – HISTORY OF SHARKCAM

Trevor Mendelow (left) and Jim Atack (right) discuss the installation of SharkCam from the living area on Frying Pan Tower.

Richard Neal (left) and David Wood (right) prep SharkCam for deployment from the deck of Frying Pan Tower 80 feet above the ocean.

For both avid viewers and relative newcomers to SharkCam, we thought you might like to know a little history about the changes that have occurred since the original camera installations in August of 2014.

Participants at the initial installation included Trevor Mendelow, Richard Neal, Jim Atack, Erin Burge, Zach Hart, and David Wood. Trevor is the designer of the pan-tilt-zoom underwater streaming webcams, self-cleaning apparatus, and transmission infrastructure[12] used in this project. Richard is the owner and operator of Frying Pan Tower[13] which hosts the camera and infrastructure offshore of North Carolina. Jim is captain of the vessel "In Sea State" which was used for camera installation and he directs diving operations for the project. Erin Burge is a Professor of Marine Science at Coastal Carolina University, and he was responsible for photo and video documentation of the installation. Zach Hart served as boat tender and dive assistant and David Wood assisted with topside engineering and logistical support for the original SharkCam installation.

On August 31, 2014 two cameras were installed. "BarracudaCam" on a shallow horizontal support of the tower in about 15 feet (5 meters) of water and the original SharkCam, also on a horizontal support at 50 feet. Both cameras faced out from on top of the horizontal pipe.

In some ways the divers that maneuvered the two cameras into position, chained them to the tower supports, and connected the data and power cables had the easy jobs. On the other hand, they did have to contend with curious visitors to the aptly named installation[14]. Much more above-water work involved running cable from atop Frying Pan Tower, positioning solar panels and transmission dishes for landward transfer of the video streams, and securing the rights to install transmission hardware atop the 1,955 foot (600 meter) Winnabow Cosmos Broadcasting Tower onshore in North Carolina.

Both cameras went live on Explore.org in September 2014 after installation, tower infrastructure, and the land-side hardware were completed.

The onset of winter 2014–2015 brought storms and large waves to Frying Pan Tower and both cameras went offline in late January 2015. A camera reboot revealed that BarracudaCam was hanging upside-down and swinging from the tower horizontal. SharkCam was also loose on its mooring. BarracudaCam ceased transmission soon after.

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[12] For details on the technical specifications and applications of these cameras visit http://viewintotheblue.com/.

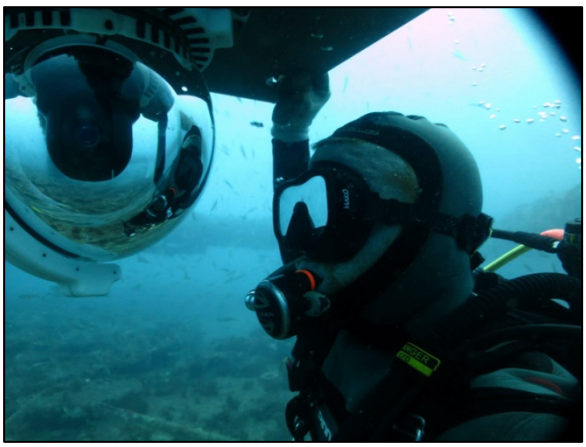
[13] For more information on Frying Pan Tower, including a history of the structure, and links to book a stay on the tower, see http://www.fptower.com/.

[14] See https://www.youtube.com/watch?v=EahO0qFmvlI for sharks and other visitors seen during installation activity.

Once sea conditions allowed, a diver maintenance team (Atack, Burge, and Frederick Farzanegan) traveled to Frying Pan Tower on March 8, 2015, and discovered that BarracudaCam was completely destroyed and SharkCam needed a thorough cleaning and replacement of the data and power cable. The cable was damaged by chafing against the hard structure of the tower during storms. SharkCam and its cabling were removed during this visit.

March 22, 2015. Jim Atack works to remove the stand from the broken Barracuda Cam.

A team was able to return to Frying Pan Tower (Atack, Burge, Farzanegan, and Adam Greene) on March 22 and the now thoroughly cleaned and repaired SharkCam was reinstalled at 50 feet. During reinstallation, maintenance divers were also tasked with rotating SharkCam to an upside-down position beneath the tower horizontal[15]. This was done to reduce the possibility of damage and to allow the camera to better "see" the bottom where much of the fish activity takes place. Routine underwater maintenance by those previously mentioned and others (Matt Davin, Steve Luff, Reed Winn, and Sondra Vitols) continued through the rest of 2015 and into 2016.



Erin Burge inspects the final installation of SharkCam 2.0

During the spring of 2016 SharkCam 2.0 was damaged and the cleaner bar assembly ceased functioning correctly. Video evidence showed an octopus crawling on the camera housing, and the cleaning bar malfunction became apparent shortly thereafter. Octopuses are curious and strong, and it is possible that this Frying Pan Tower visitor is to blame for the malfunction. Consequently, algae and other organisms built up quickly on the transparent dome enclosing the camera. Several maintenance trips by boat or with divers deployed directly from Frying Pan Tower during the spring and early summer attempted to keep up with the growth, but the view has been obstructed for much of the summer season.

On August 12, 2016, Jim Atack, Erin Burge, Steve Luff, and Sondra Vitols participated in a removal of SharkCam 2.0, and installation of a new and upgraded high definition (HD) SharkCam 3.0. The HD camera installation was accompanied by installation above and below water of an enclosed conduit that runs along the vertical leg of the tower to the depth of SharkCam. The power and data cabling is now routed through this conduit and the conduit is strongly attached to the tower leg. This should reduce or eliminate chafing on the data cable and further protect the installation. Above water installation of the conduit was accomplished by Richard Neal and Saylor Man.

Early September saw the arrival of Tropical Storm Hermine to the Carolina coast. Although SharkCam 3.0 was not yet broadcasting online because of maintenance needed at the Winnabow tower onshore, the underwater data and power cable were damaged again. On September 10, 2016, Jim Atack and Erin Burge, below water, and Richard Neal and Brooke Briza, above water, swapped out the damaged data cable. In water activities included tightening all of the fittings and hardware from the water line to the bottom, and surveying the footprint of Frying Pan Tower for future hazards to SharkCam. As of this writing data transmission from SharkCam 3.0 to the tower has been re-established and we are waiting on repairs to the Winnabow tower transmission equipment that should reestablish live streaming via Explore.org.

[15] For video footage of the March 22, 2015, SharkCam 2.0 installation visit https://www.youtube.com/watch?v=VZ9lVPUNRKY.

SCIENTIFIC AND COMMON NAMES INDEX

Note: Index entries refer to main entries in the Identification Images, Species Profiles, and Additional Information sections. Similar Species are listed within each Species Profile.

SharkCam Fishes

For questions related to this guide or its usage contact Erin Burge. The suggested citation for this guide is:

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