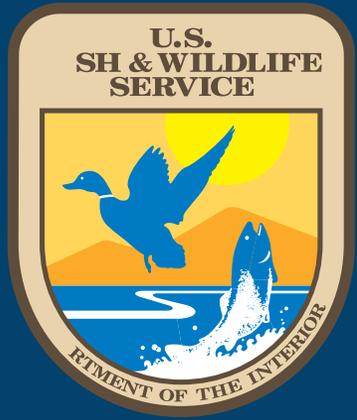


# Fish Morphology Presentation

The presentation contains links that will quickly navigate you through the different sections





# Fish Morphology

Salmon Anatomy: Survival Adaptations



# Select an adaptation below to learn more

[Body Shape](#)

[Tail Shape](#)

[Color Pattern](#)

[Mouth Shape](#)

[Teeth and Gill Rakers](#)



# Body Shape Adaptations

Click on an adaptation below to learn more

Fusiform



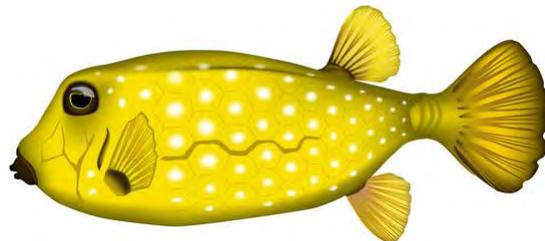
Ribbon



Depressed (Flat)



Globiform



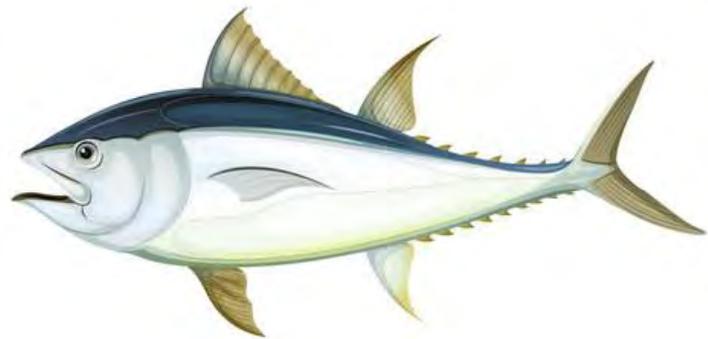
Compressed



Main  
Menu



# Body Shape - Fusiform

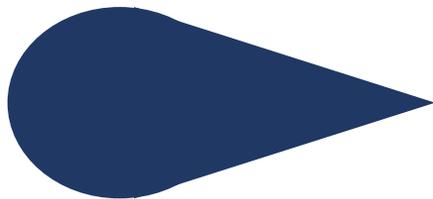


Atlantic Bluefin Tuna

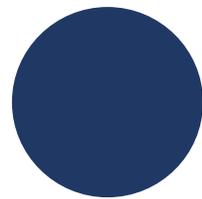
- Streamlined and torpedo shaped
- Fast swimmers

## Examples

- [Marlin](#)
- [Anchovy](#)



Side  
view



Front  
view

Back



# Body Shape - Ribbon

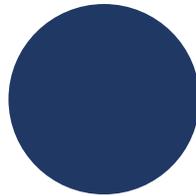


European Eel

- Elongated; snake-like
- Hides in small cracks and crevices to ambush prey



Side  
view



Front  
view

## Examples

- [Eels](#)
- [Sand lance](#)

Back



# Body Shape – Depressed



Electric Ray

- Flattened (top to bottom)
- Common in bottom dwelling fish

## Examples

- [Rays](#)
- [Halibut](#)



Side  
view

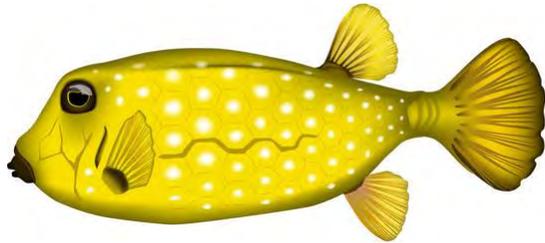


Front  
view

Back



# Body Shape - Globiform

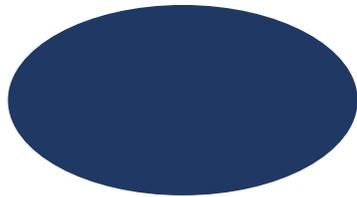


Yellow Boxfish

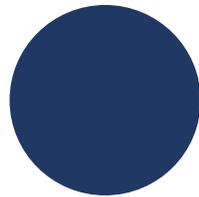
- Rounded
- Slow swimmers

## Examples

- [Pufferfish](#)
- [Boxfish](#)



Side  
view



Front  
view

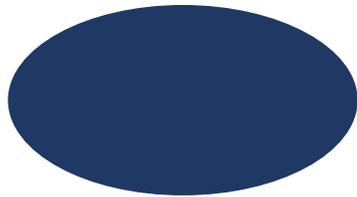
Back



# Body Shape – Compressed



Blue Tang



Side  
view



Front  
view

- Compressed (side to side)
- Maneuverable; able to make quick, sharp turns

## Examples

- [Tang](#)
- [Crappie](#)

Back



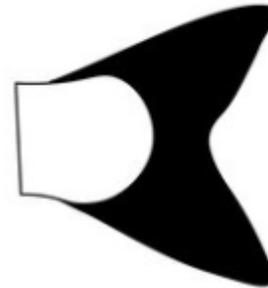
# Tail Shape Adaptations

Click on an adaptation below to learn more

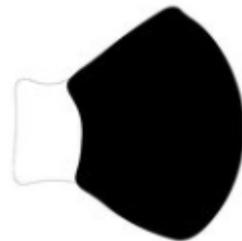
Lunate



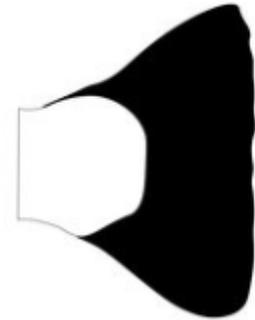
Forked



Rounded



Squared



Tapered



[Main Menu](#)



# Tail Shape – Lunate



- Crescent shape
- Fastest swimmers

## Examples

- [Swordfish](#)
- [Mako shark](#)

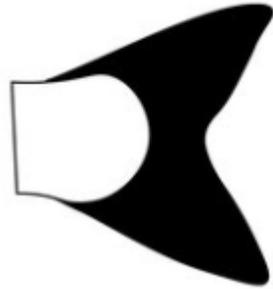


Sailfish

[Back](#)



# Tail Shape – Forked



- Moderately fast swimmer
- Able to swim continuously over long distances



Atlantic Mackerel

## Examples

- [Menhaden](#)
- [Pilot fish](#)

[Back](#)



# Tail Shape – Squared



Brown Trout

- Maneuverable swimmer
- Bursts of speed over short periods of time to escape predators
- Less drag than “rounded” shape

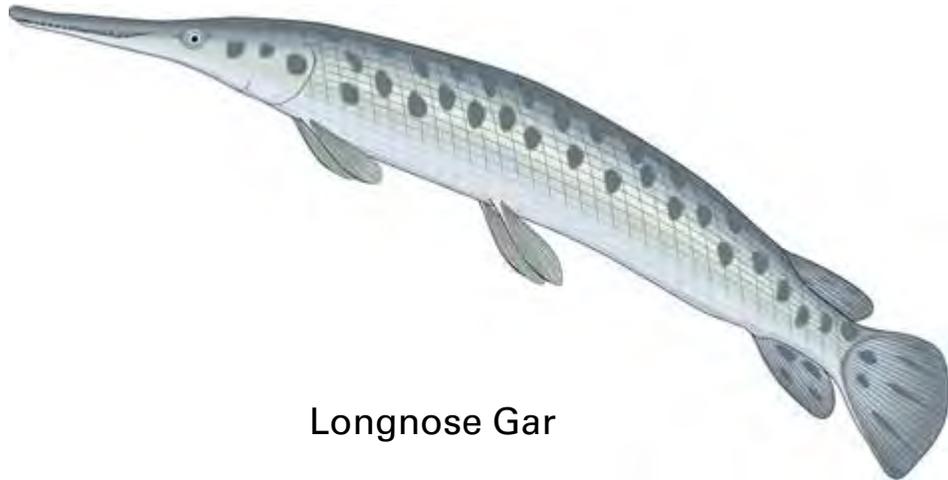
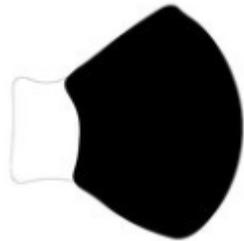
## Examples

- [Salmon](#)
- [Rockfish](#)

[Back](#)



# Tail Shape – Rounded



Longnose Gar

- Sharp turns and quick starts to evade predators
- Creates drag causing fish to tire easily

## Examples

- [Clownfish](#)
- [Goby](#)

[Back](#)



# Tail Shape – Tapered



- Slow swimmers
- Swims by making a wave-like motion with its body



Moray Eel

## Examples

- [Grenadiers](#)
- [Large-eyed rabbitfish](#)

[Back](#)



# Color Pattern Adaptations

Click on an adaptation below to learn more

Camouflage



Advertising



Disruptive



Deceiving



Countershading



Courtesy of Columbia River FWCO Information and Education, 2022

Main  
Menu



# Color Pattern – Camouflage



Painted frogfish

- Match surroundings to blend in and hide
- Used by both prey fish and ambush predators

## Examples

- [Green Clown Goby](#)
- [Large-eyed rabbitfish](#)

[Back](#)



# Color Pattern – Advertising



Mandarinfish

- Warning to stay away from poisons or spines
- Attract mates, defend territories, clean other fish

## Examples

- [Hawaiian Cleaner Wrasse](#)
- [Squarespot Anthias](#)

[Back](#)



# Color Pattern – Disruptive



Clown Triggerfish

- Spots, stripes, and patches of color breakup and diffuse the actual outline
- Irregular patterns with contrasting colors

## Examples

- [Moorish Idol](#)
- [Blackbanded Sunfish](#)

[Back](#)



# Color Pattern – Deceiving



Epaulette Shark

- Resembling an object or fish that is not of interest to a predator
- Markings that confuse predator

## Examples

- [Ambon Damselfish](#)
- [Saddle Butterflyfish](#)

[Back](#)



# Color Pattern – Countershading



Atlantic Tarpon

- Resembling an object or fish that is not of interest to a predator
- Markings that confuse predator

## Examples

- [Whale Shark](#)
- [Atlantic Herring](#)

[Back](#)



# Mouth Shape Adaptations

Click on an adaptation below to learn more

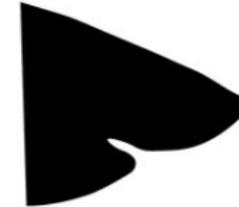
Superior



Terminal



Inferior



Protruding



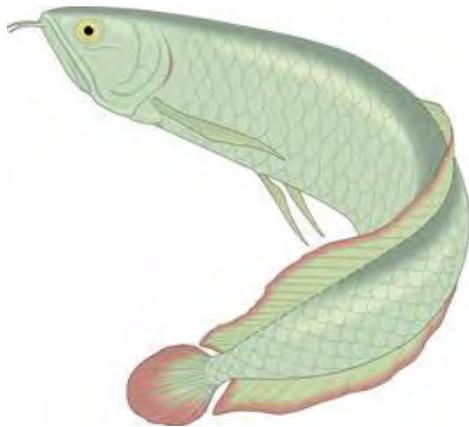
Elongated



Main  
Menu



# Mouth Shape – Superior



Arowana

- Uprturned
- Suggests surface feeder; waits for prey to appear above them

## Examples

- [Lionfish](#)
- [Stonefish](#)

[Back](#)



# Mouth Shape – Terminal



- Middle of head; points forward
- Feed on organisms floating in water column



Humphead Wrasse

## Examples

- [Blue Spotted Jawfish](#)
- [Blue Gourami](#)

[Back](#)



# Mouth Shape – Inferior



- Downturned
- Suggests bottom-feeder

## Examples

- [Honeycomb Cowfish](#)
- [Channel Catfish](#)

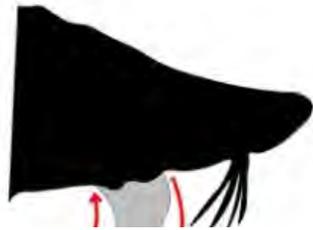


Gray Atlantic Sturgeon

[Back](#)



# Mouth Shape – Protruding



- Extends reach
- Creates vacuum to suck up prey

## Examples

- [Slingjaw Wrasse](#)
- [Carp](#)



Tilapia

[Back](#)



# Mouth Shape – Elongated



Alligator Gar

- Elongated jaws can reach into crevices and holes
- Can be used to dig for prey or scoop from surface

## Examples

- [Butterfly Fish](#)
- [Atlantic Needlefish](#)

[Back](#)



# Teeth and Gill Raker Adaptations

Click on an adaptation below to learn more

Pointed Teeth



Tooth Plates



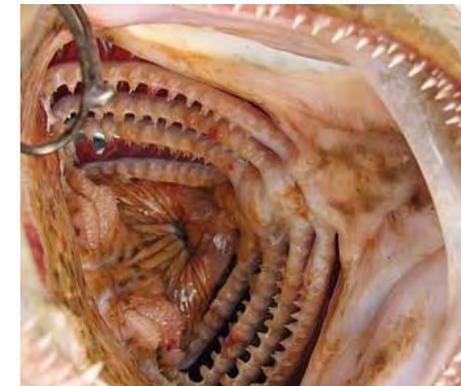
Beak-like Teeth



Comb-like Gill Rakers



Large, Course Gill Rakers



Courtesy of Columbia River FWCO Information and Education, 2022

Main  
Menu



# Teeth Shape and Size – Pointed



Payara

- Eats other fish
- Designed to puncture, hold or cut prey

## Examples

- [Anglerfish](#)
- [Lingcod](#)

[Back](#)



# Teeth Shape and Size – Tooth Plates



Sheephead Wrasse

- Feeds on shelled animals
- Uses tooth plates to crush shells to get the meat inside

## Examples

- Freshwater Drum
- Bat Ray

[Back](#)



# Teeth Shape and Size – Beak-like Teeth



Bumphead Parrotfish

- Crush prey items
- Feeds on organisms such as plants or coral

## Examples

- [Pufferfish](#)
- [Parrotfish](#)

[Back](#)



# Gill Raker Size and Shape – Comb-like



Gill Rakers from American Shad

- Efficient at filtering tiny prey

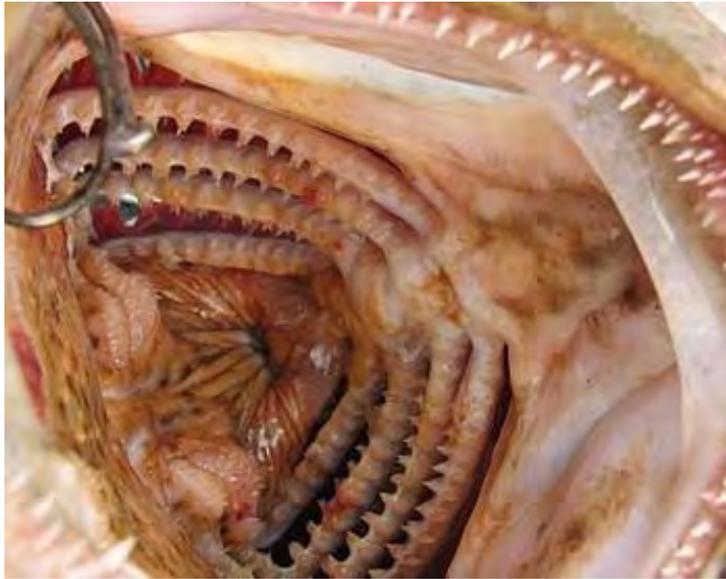
## Examples

- [Candy Darter](#)
- [Sardine](#)

[Back](#)



# Gill Raker Size and Shape – Large, Course



Gill Rakers from Orange Spotted Grouper

- Protects gills when they eat from large prey items

## Examples

- [Grouper](#)
- [Bowfin](#)

[Back](#)