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# Anatomy of Finfish

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# Introduction

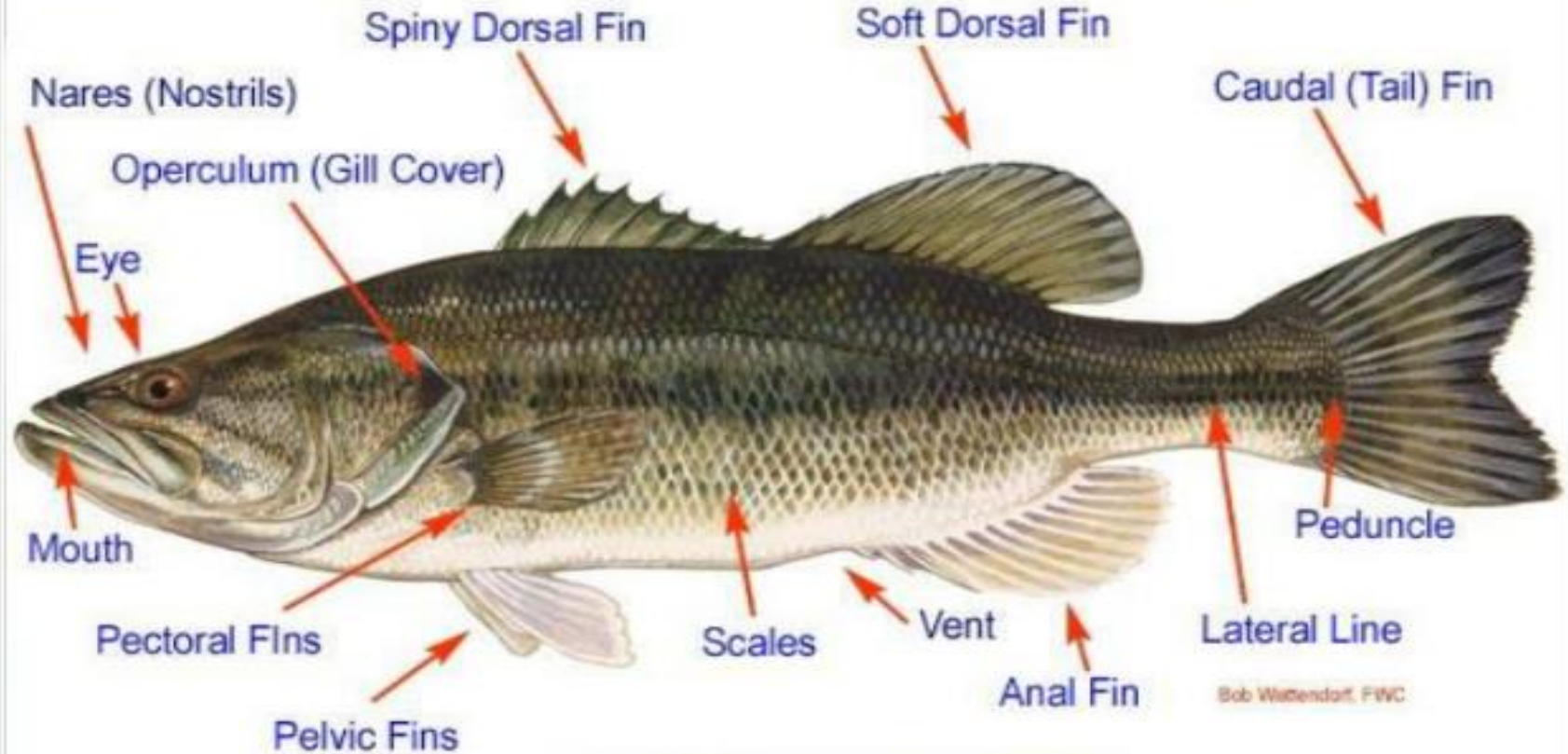
- Finfish can be defined as cold-blooded aquatic craniate vertebrate with fins for locomotion and gill for respiration.
- About **33,218** species of finfish has been identified in the world at present time.
- It may live in freshwater, brackish water and marine water.
- The skeleton of finfish is made up of either bone (called **bony finfish**) or cartilaginous (called **cartilaginous finfish**).



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# External Anatomy of Fish



EXTERNAL ANATOMY



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# External part of finfish is commonly divided in two parts

- 1) Head consist of Snout, Lips, Mouth, Jaws, Teeth, Barbels, Nostril, Eyes, Operculum and Gills;
- 2) Body incudes Fins, Lateral Line, Skin and Scales.



# Mouth Shape/ Position

## •Superior Mouth

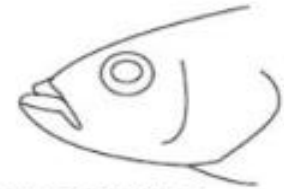
- Also known as an undershot or upturned mouth
- Eats food above the fish
- May eat at the water's surface

## •Terminal Mouth

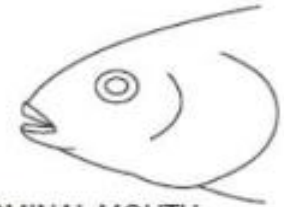
- Eats food in front of it

## •Inferior Mouth

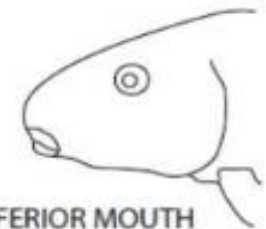
- Also known as an underslung mouth
- Eats food below it
- May eat off of the bottom



SUPERIOR MOUTH



TERMINAL MOUTH



INFERIOR MOUTH



# Operculum & Gills

- **Gills**

- Allows gas exchange for the fish
- Through the gills, fish are able to absorb oxygen and give off carbon dioxide

- **Operculum**

- The gill cover



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## Barbels

- **Also known as whiskers**
- **located under the mouth of a fish**
- **are tactile and taste organs used for locating food in dark or muddy waters**

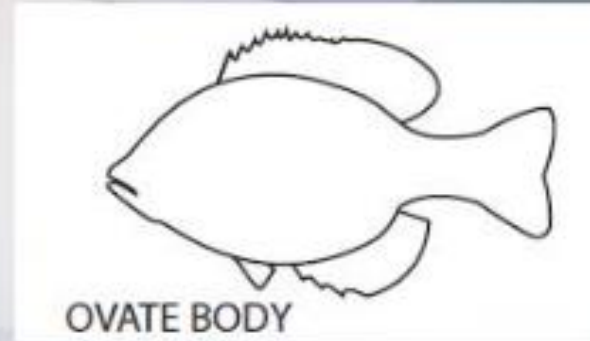


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# Body shapes

## •Ovate Body

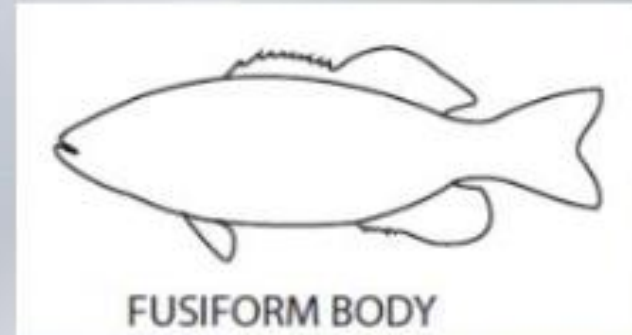
- Slow swimmer
- Difficult for predators to swallow



OVATE BODY

## •Fusiform Body

- High speed swimmers
- The most common form



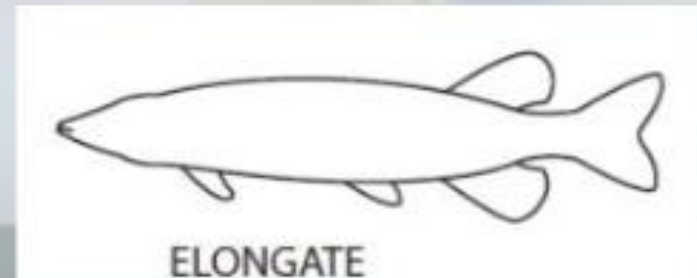
FUSIFORM BODY

## •Truncate

- A shortened type of fusiform

## •Elongate/Serpentine

- Hides in rocks and weeds



ELONGATE





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## Body Covering

- **covered with scales, which protect the body**
- **Most fish get extra protection from a layer of slime that covers their scales called mucus.**



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# Scales

- The outer body of many fish is covered with scales.
- Some fishes have a type of scale known as the scute, which is an external shield-like bony plate, or a modified, thickened scale that often is keeled or spiny. eg. clupeids and carangids.
- There are four principal types of fish scales,
- which are following:

## Lateral Line

- **is a series of fluid-filled ducts located just under the scales**
- **picks up vibrations in the water**
  - fish are able to detect predators, find food, and navigate more efficiently
- **help the fish detect water pressure changes**
- **It can detect minute electrical currents in the water**
- **It runs in a semi line from the gills to the tail fin. It can be easily seen in fish as a band of darker looking scales running along the side.**



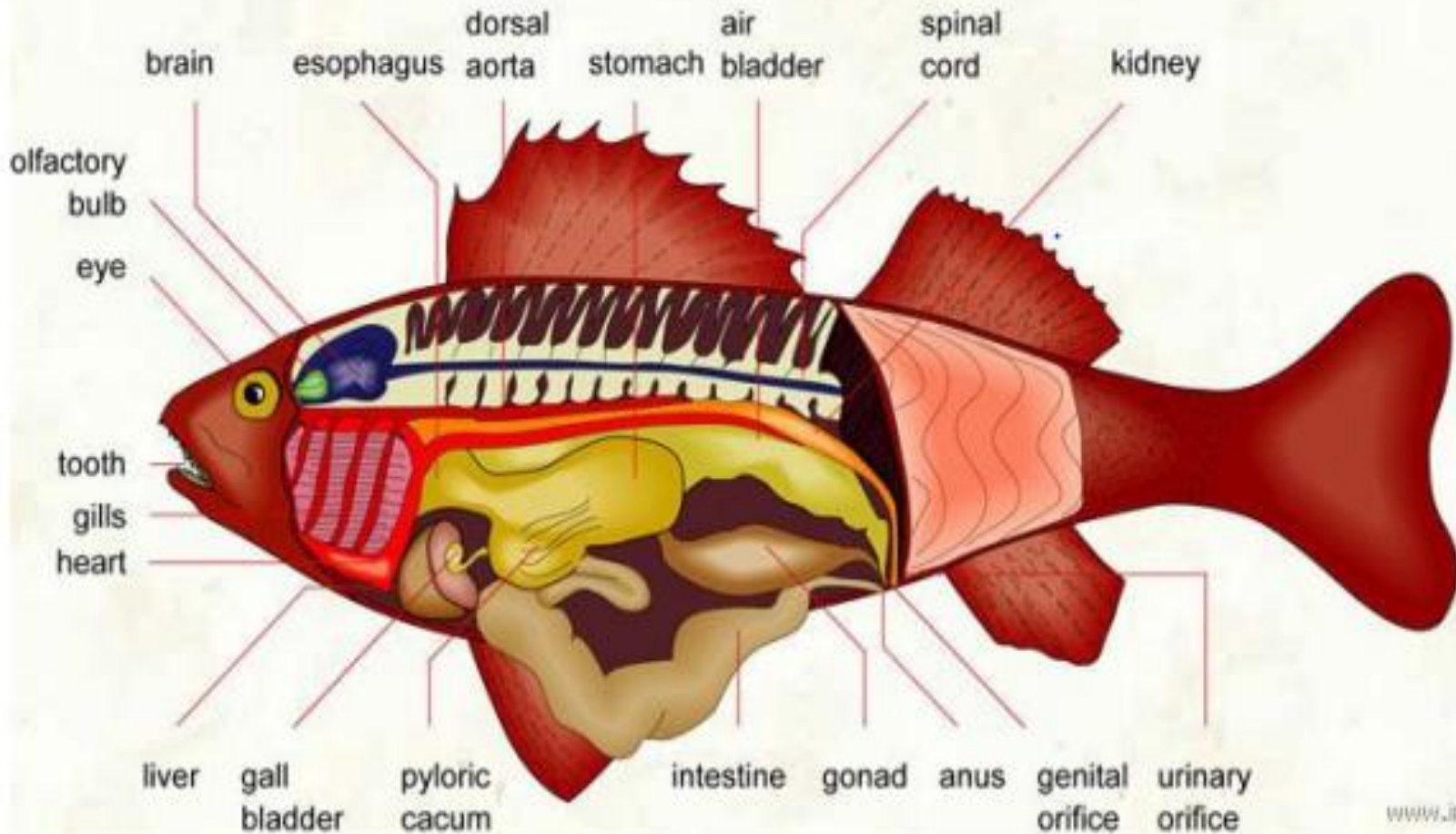
# Fins

- **used for movement, stability, nest-building, spawning, and as tactile organs**
- **can be single or paired**





## INTERNAL ANATOMY OF A BONY FISH





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# Internal anatomy of a bony fish

Finned aquatic vertebrates animal with skin covered with scales.

It lives in water and is usually oviparous.

Brain: seat of the mental faculties of a fish.

Esophagus: part of the digestive tract connecting the mouth to the stomach.

Dorsal aorta: vessel in the back that carries blood from the heart to the organs.

Stomach: part of the digestive tract between the esophagus and the intestine.

Air bladder: pocket in which urine collects.

Spinal cord: part of the nervous system that connects the brain to all other parts of a fish.

Kidney: blood-purifying organ



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# Internal anatomy of a bony fish

Urinary orifice: opening for eliminating urine.

Genital Orifice: opening related to the genital organs.

Anus: end of the digestive tract.

Gonad: hormone-secreting sexual gland of a fish.

Intestine: last part of the digestive tract.

Pyloric ceacum: cul-de-sac related to the intestine.

Gall bladder: small sac containing the bile.

Liver: bile-producing digestive gland.



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**Heart: blood-pumping organ.**

**Gills: respiratory organ of a fish.**

**Tooth: hard organ of a fish used to shred food.**

**Eye: sight organ of a fish.**

**Olfactory bulb: bulging part of the smell organ of smell of a fish.**





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*Thank you*