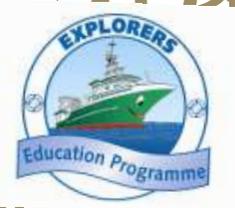


# THE SHAPES OF FISH

Around Our Irish Coast

*Design, Drawings, Compilation*  
**Carmel T. Madigan**

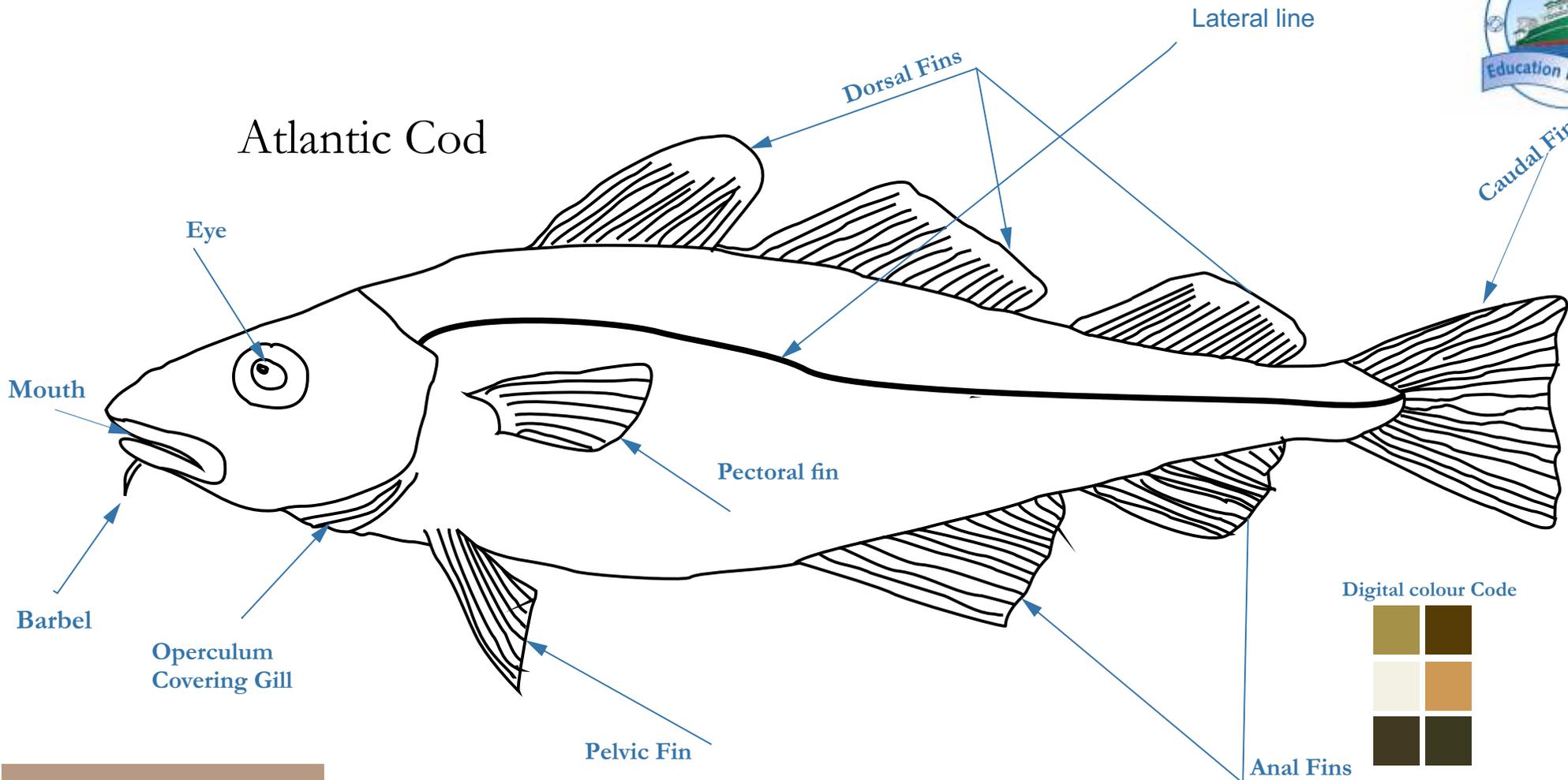
Loophead Summer Hedge School



# Parts of a Fish - external body



Atlantic Cod



Smaller fishing vessels contribute around 20% of the total landings of Cod.

These vessels operate mainly near the south coast of Ireland where catch rates of cod are highest.

Atlantic cod (*Gadus morhua*) are widely distributed on both sides of the north Atlantic. In the North East Atlantic they occur from Norway to the Bay of Biscay. Cod around Ireland are very fast growing and attain lengths in excess of 35cm in the first year and over 90cm as adults.

About 50% of individuals are mature at 2 years and virtually 100% are mature by 3 years of age.

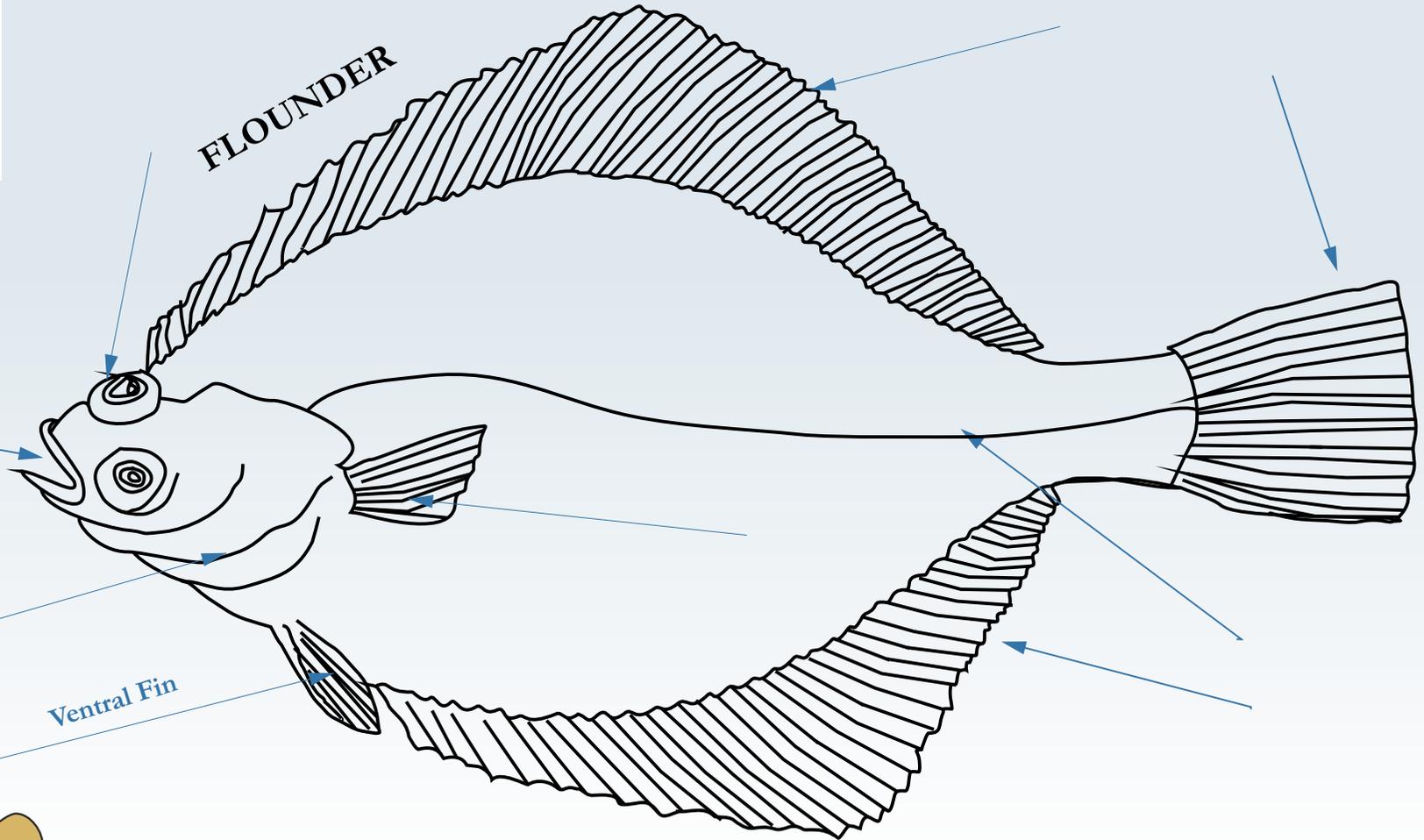
Juveniles are more commonly found from 30 to 80m, mainly on rocky bottoms of the ocean.

Their diet consists of benthic animals, crustaceans and small fish. Fish become more prevalent in the diet in older cod. Once mature an adult female can produce over 2 million eggs.

(Source: The Stock Book - Marine Institute (2018))



**FLOUNDER**

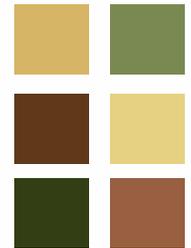


**Ventral Fin**

**Demersal Fish**  
 Demersal means living close to or on the sea floor, which is often sandy or silty. Flat fish like Flounder Plaice and Skates are demersal.

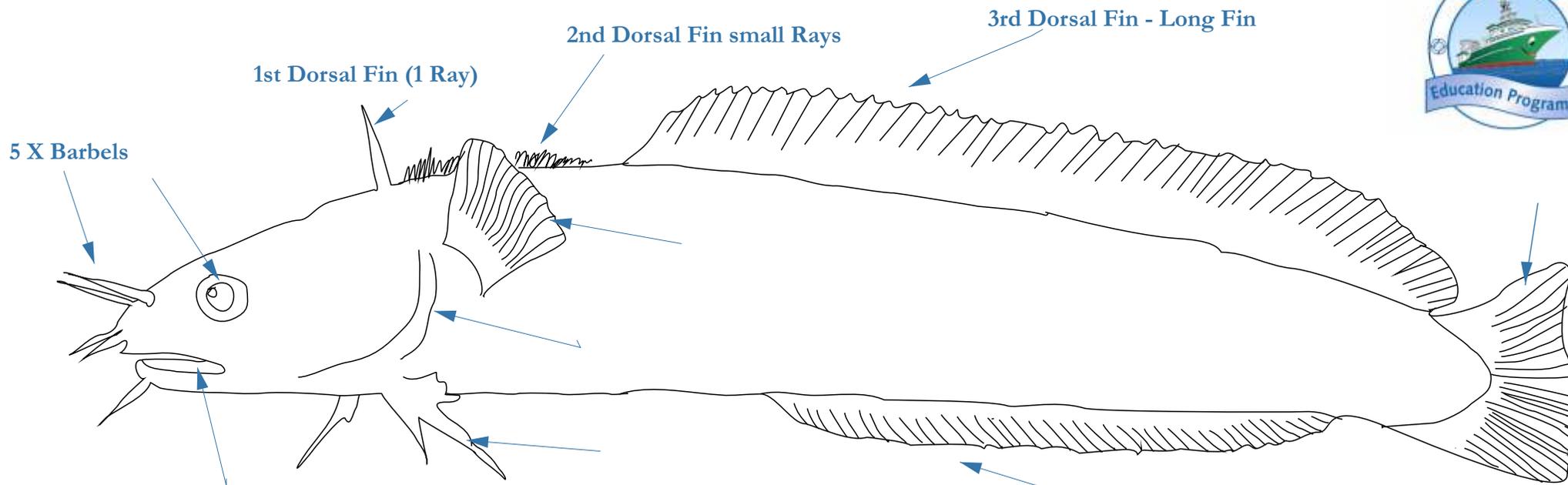
<b>Species Common name:</b>	<b>Flounder</b>
<b>Scientific name:</b>	<b>Platichthys flesus</b>
<b>Irish Name:</b>	<b>Leith</b>
<b>Size Range:</b>	<b>27-60cm (Adult)</b>
<b>Habitat:</b>	<b>Sandy/silty low salinity</b>
<b>Positioning/Depth</b>	<b>Demersal to 100 metres</b>
<b>Other info:</b>	<b>Commonly found on the Shannon Estuary - Low Commercial value</b>

**Digital Colour code Flounder**

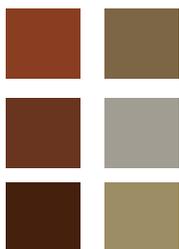


**LABEL THOSE PARTS ABOVE:**  
 From the following list:

- Eyes
- Mouth
- Dorsal Fin
- Pectoral Fin
- Caudal Fin
- Anal Fin
- Operculum - Gill
- Lateral Line



### Digital Colour Code



## Five-bearded Rockling

**Species - Five Bearded Rockling** is often encountered and caught during Seashore Safari's with school groups! The five bearded rockling is a common fish in inshore waters. It prefers areas with mud, shells, and stones. It eats lugworms and ragworms and is not a commercial fish.

**Size Range:** The five bearded rockling can grow to almost thirty centimetres in length, although typically it is half of this size.

Complete labels above  
From the following list:

Eyes

Mouth

Operculum - Gill

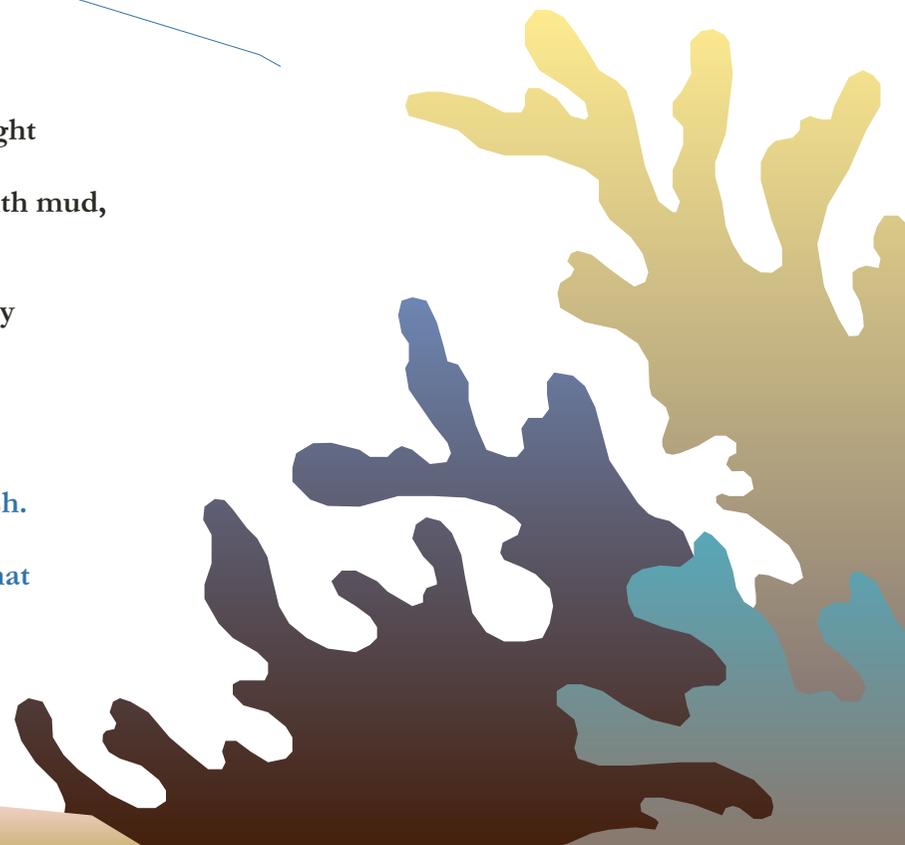
Pectoral Fin

Caudal Fin

Anal Fin

Ventral Fin

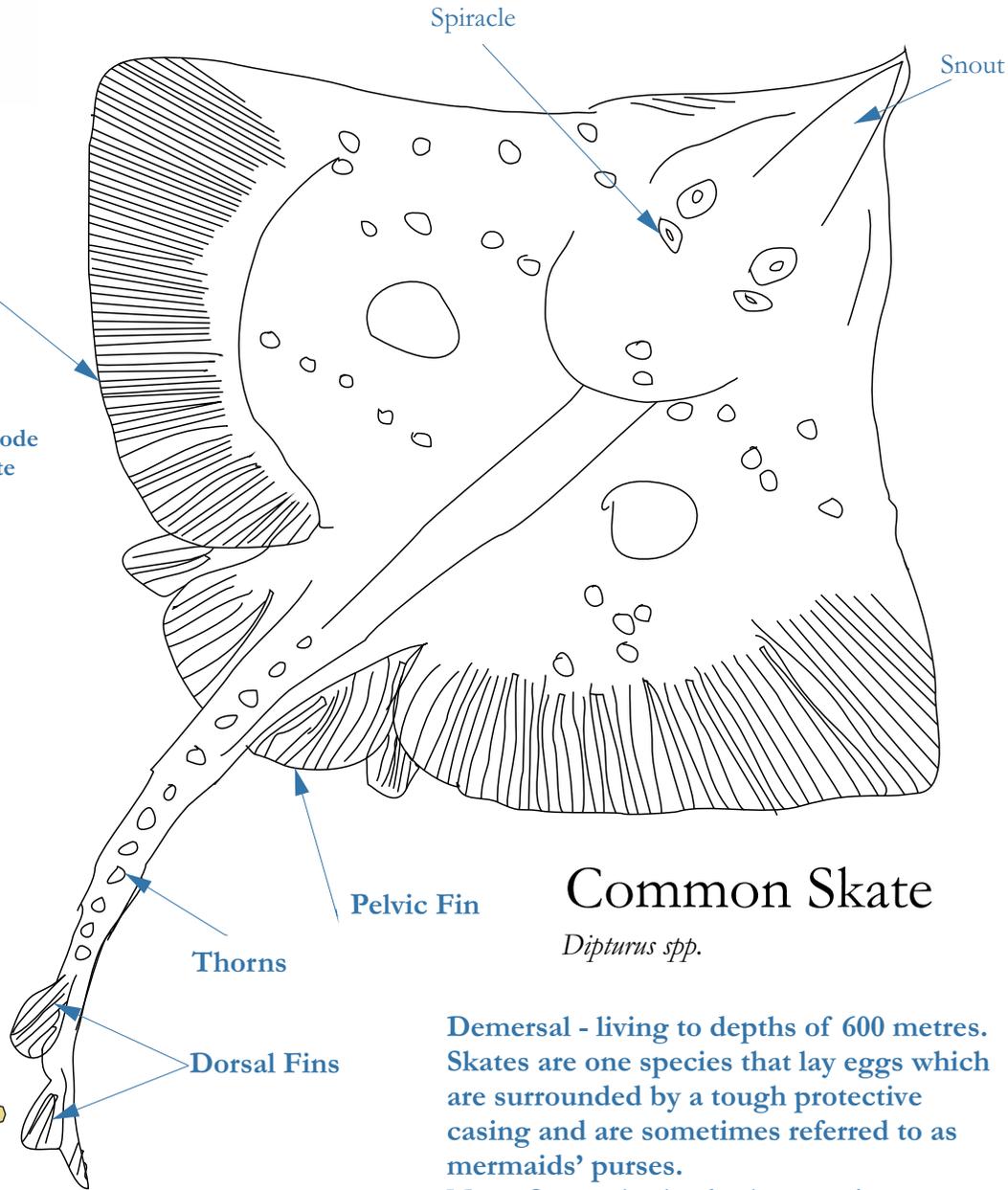
Barbels are a whisker like organ found near the mouth of certain fish. (Cod like Species - like Rockling) These organs are sensory organs that help the fish locate food in murky waters, acting as taste buds or nostrils.





Pectoral Fin

Digital Colour code  
Common Skate



## Common Skate

*Dipturus spp.*

Demersal - living to depths of 600 metres. Skates are one species that lay eggs which are surrounded by a tough protective casing and are sometimes referred to as mermaids' purses.

Note: Some sharks do the same!

## ICUN - Critically Endangered species

The common skate is the largest species of skate in the world, and is one of the largest creatures in Irish waters. A fully grown skate can have a 'wingspan' of over three metres and weigh in excess of 115kgs. Skate of this size are thought to be up to seventy years old.

Skates used to be common around the coast of Ireland, but their numbers have seriously dwindled throughout their habitat globally. This is due to targeted overfishing.

Catches of white skate, common skate, long-nosed skate, and undulate ray, are **now prohibited from landing in EU**, from EU waters including around Ireland. They must be returned unharmed where possible. (EU legislation 2009)

Skate are found in water up to two hundred metres deep, although they will come into shallower water during warmer weather. They feed on crustaceans and molluscs where their incredibly powerful jaws can easily crunch through the shells of these creatures. They will also feed on fish, especially flatfish such as plaice and flounder that they are most likely to find along the seabed. Skate are capable of catching pelagic species such as mackerel, herring, pollock and dogfish, with larger skate likely to feed mostly by hunting fish.

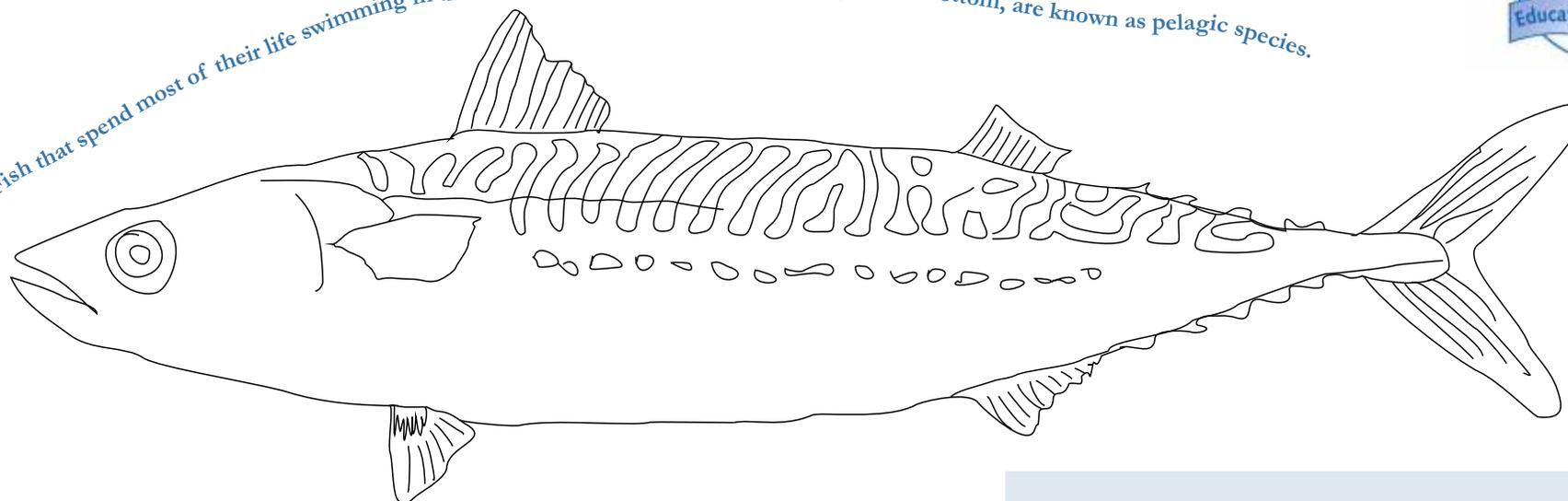
Skates, have a bird-like movement, flapping their wide 'wings' through the water column.

### What is a Spiracle?

The nasal opening of whales and other cetaceans is called a spiracle, as is the respiratory opening behind the eyes of rays and skates.



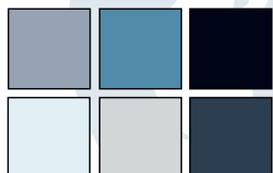
Pelagic : Fish that spend most of their life swimming in the water column, as opposed to resting on the bottom, are known as pelagic species.



Scientific name:  
*Scomber scombrus*

**Pelagic - Commercial**

Digital Colour Code: Mackerel



On average, approximately 82,600 tonnes of mackerel are caught and landed by Irish vessels. It is the most valuable pelagic stock to Ireland worth approximately €59,000,000 in 2017. Ireland has approximately 17% of the overall EU TAC.

TAC / Total Allowable Catch is the total regulated catch from a stock in a given time period, usually a year.

Source: The Stock Book - Marine Institute (2018)

## Atlantic Mackerel - Ronnach

The Atlantic Mackerel is a widely distributed, migratory pelagic fish that inhabits much of the north-eastern Atlantic shelf.

It is streamlined and fast swimming, (50 metres in 10 seconds) forming dense shoals when migrating to spawning grounds to the south and west of Ireland. Spawning takes place between February and July after which they migrate north. Diet depends on season but consists mainly of zooplankton and juvenile fish. Juvenile mackerel grow rapidly and reach 30cm after 2 years at which point more than half are mature. The majority of mackerel caught are between 4 and 8 years of age with individuals older than 15 years rare.

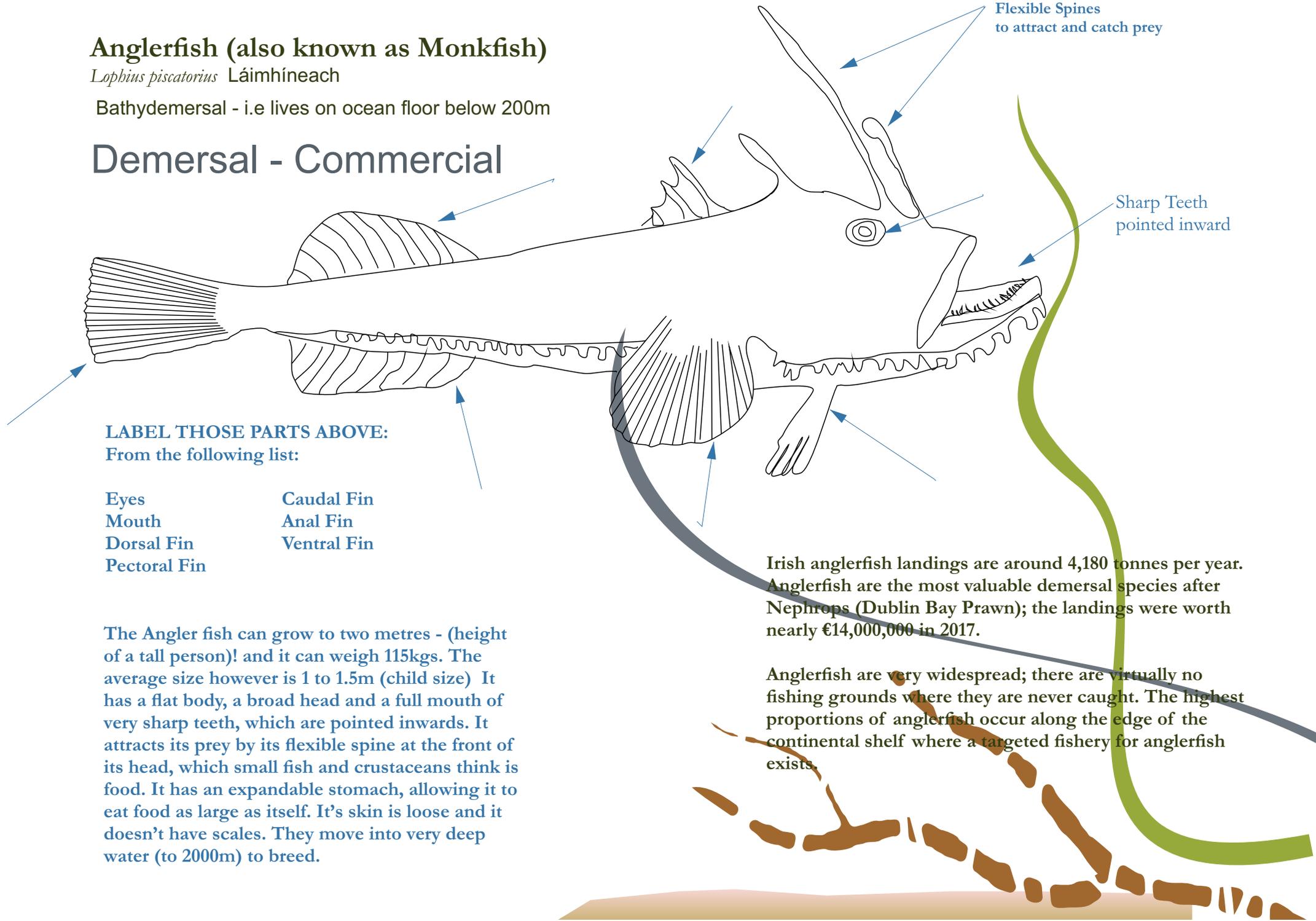
(Source: The Stock Book - Marine Institute (2018))

# Anglerfish (also known as Monkfish)

*Lophius piscatorius* Láimhíneach

Bathydemersal - i.e lives on ocean floor below 200m

## Demersal - Commercial



Flexible Spines  
to attract and catch prey

Sharp Teeth  
pointed inward

**LABEL THOSE PARTS ABOVE:**  
From the following list:

Eyes  
Mouth  
Dorsal Fin  
Pectoral Fin

Caudal Fin  
Anal Fin  
Ventral Fin

The Angler fish can grow to two metres - (height of a tall person)! and it can weigh 115kgs. The average size however is 1 to 1.5m (child size) It has a flat body, a broad head and a full mouth of very sharp teeth, which are pointed inwards. It attracts its prey by its flexible spine at the front of its head, which small fish and crustaceans think is food. It has an expandable stomach, allowing it to eat food as large as itself. It's skin is loose and it doesn't have scales. They move into very deep water (to 2000m) to breed.

Irish anglerfish landings are around 4,180 tonnes per year. Anglerfish are the most valuable demersal species after *Nephrops* (Dublin Bay Prawn); the landings were worth nearly €14,000,000 in 2017.

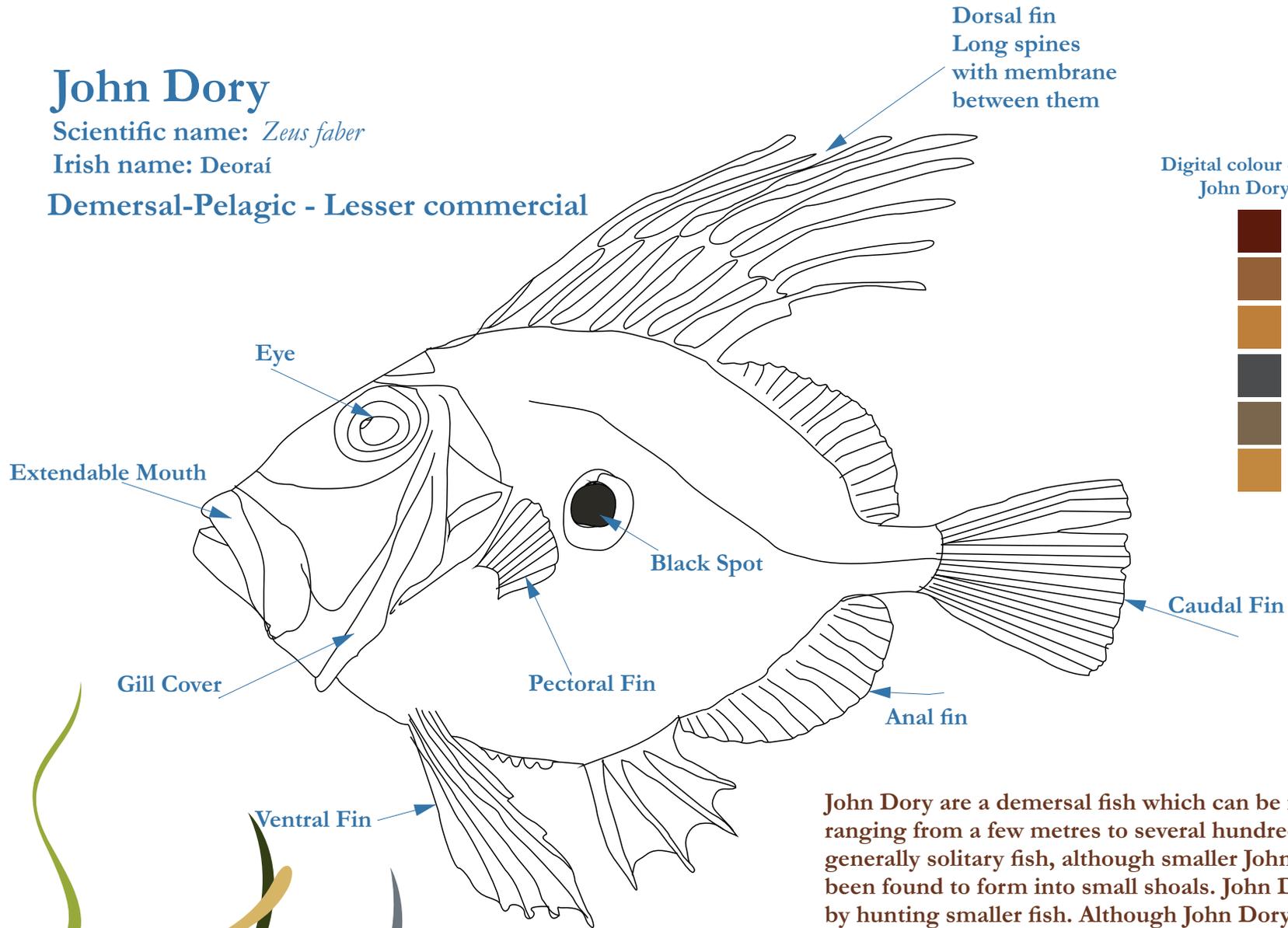
Anglerfish are very widespread; there are virtually no fishing grounds where they are never caught. The highest proportions of anglerfish occur along the edge of the continental shelf where a targeted fishery for anglerfish exists.

# John Dory

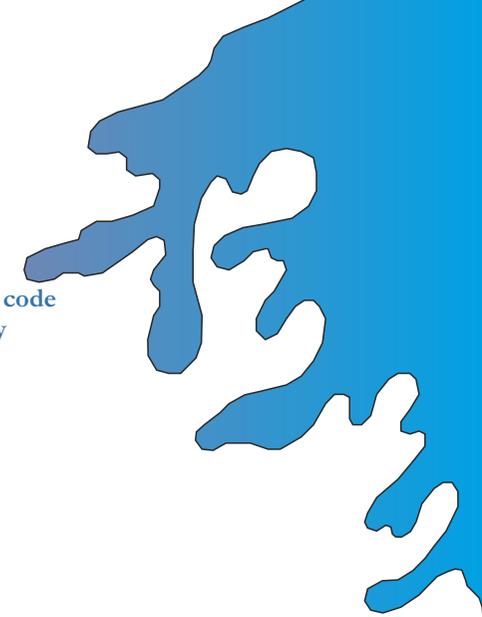
Scientific name: *Zeus faber*

Irish name: Deoraí

Demersal-Pelagic - Lesser commercial



Digital colour code  
John Dory



John Dory are a demersal fish which can be found in water depths ranging from a few metres to several hundred metres deep. They are generally solitary fish, although smaller John Dory have occasionally been found to form into small shoals. John Dory are predators and feed by hunting smaller fish. Although John Dory are poor swimmers their tube-like mouth is extendable, meaning they only have to get near to their prey where they can shoot their mouth out and suck in the smaller fish. The black mark on the side of the John Dory is a defensive measure, used to confuse predators by fooling them into thinking they are looking at the eye and head of a much larger fish. John Dory is a sought after fish in the food industry.



# Fish Quiz

What did we learn from studying the shapes of fish and labeling and studying the parts of the external body?

1. What is a Spiracle?
2. What does 'Demersal' mean?
3. Name a fish that has 5 Barbels.
4. Where is the Caudal fin of a fish located?
5. What are the names of the fins on the upper body of a fish?
6. How many dorsal fins does a Cod have?
7. Name a flat fish.
8. Which fish has a black spot on its body to confuse predators?
9. Name a fish with sharp teeth pointed inwards.
10. Name a fish that has flexible spines near its mouth to attract prey.
11. On what location in the body is the anal fin positioned?
12. Do fish have backbones?
13. What is a creature with a backbone called?
14. Is the pectoral fin closer to the eye or the tail of a fish?
15. What does 'pelagic' mean?
16. Name a critically endangered species of fish around our Irish coast.
17. Name a fish that has thorns.
18. Where would you find a five-bearded rockling?
19. How fast can an adult mackerel swim?
20. Which is the most valuable pelagic fish commercially fished off Ireland?