
How do fish protect themselves against predators?

Protection Against Predators

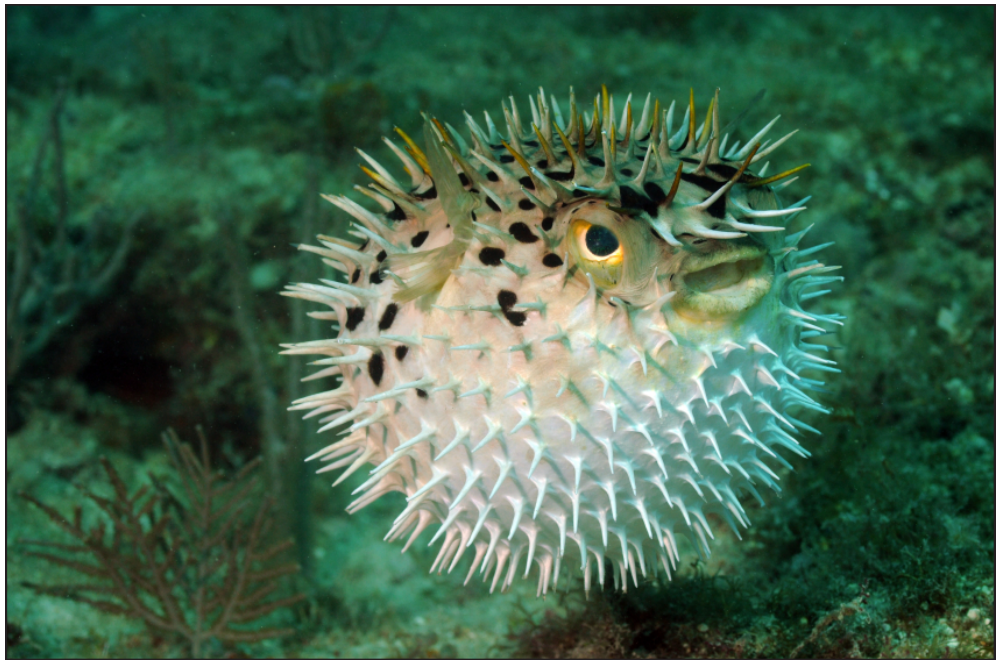
Tetraodontidae are a group of poisonous fish known for their ability to puff themselves up into a round ball as a defence mechanism when under threat.

There are many species that live in marine and esturine environments. They are known by many names including pufferfish, blowfish, globefish, toadfish and balloonfish.

Pufferfish are slow swimmers but they have excellent eyesight. When they sense danger they fill their stomachs with water (or air if they are out of water). This exposes sharp spines that cover their bodies. This makes them less inviting for predators to catch.

Their skin and some internal organs contain tetrodotoxins, which are highly toxic substances. The toxins affect the nerves, paralysing the diaphram, thereby causing respiratory failure in many animals including humans. Toxin levels can vary between species.

Pufferfish is considered a delicacy in Japanese, Chinese and Korean cuisines. Specialist chefs prepare the fish. They know which parts and in which quanties are safe to eat. However, poisonings and occasional deaths do occur when the food is not prepared properly.



Lionfish

Lionfish have a distinctive striped pattern. They may look like beautiful, serene creatures meandering their way around the coral reef, but beware!

Lionfish rely on their poisonous spines as protection against predators. If injected into the skin, toxins can cause respiratory failure in humans.

Sharks do not appear to be affected by the toxins found in the lionfish.

Protection Against Predators

Butterfly fish have a large spot that looks like an eye on the tail end of their body. Their real eye is often much smaller or camouflaged within other body markings. This is to trick a predator into thinking the fish will move in the direction of the false eye, thereby giving the small fish a chance to escape capture.

There are many species of Butterfly fish with different markings.

Why do fish swim together?

When a group of fish swim together in the same direction it is called 'schooling'. Many species of fish swim in a school, twisting and turning as one unit. Together they look like a much bigger fish which may scare some predators away.

Many fish swimming together can reduce the individual's chances of being caught by a predator. The fish swimming in the middle of the group may be safer than those swimming on the outer boundaries of the group. In the event of a predator attack, safety in numbers works!

Some predator fish work together to 'herd' schools of smaller prey. They control their direction, making them easier to attack.

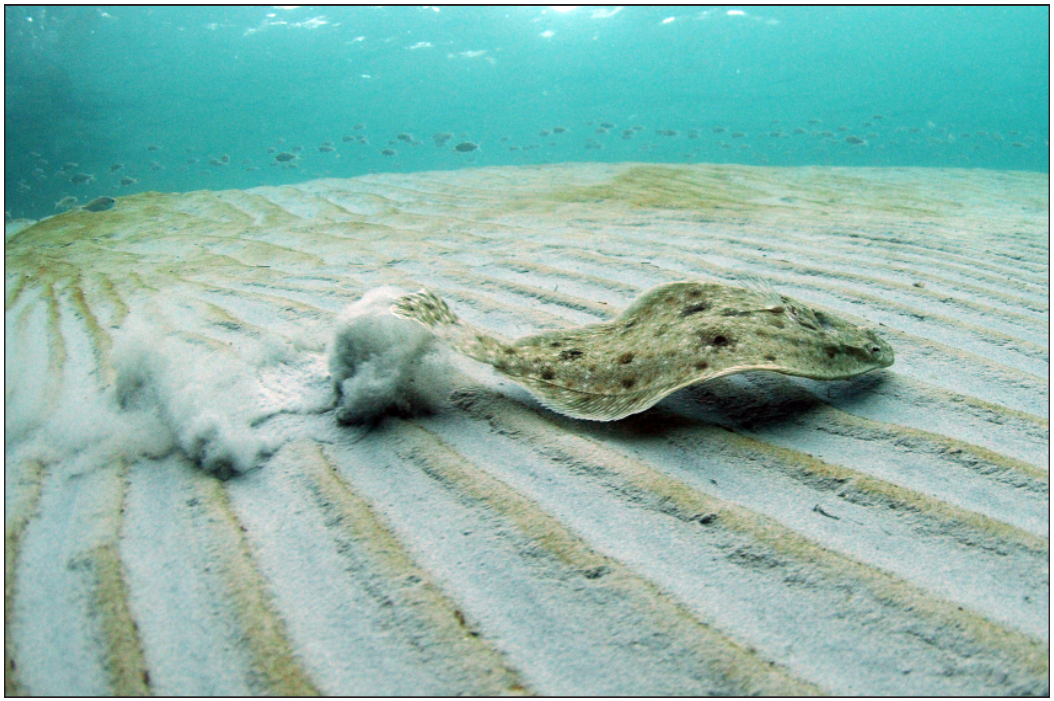
Some species of fish find that schooling is an effective way to help fertilize their eggs at spawning time, giving their population a better chance of survival.

Special Adaptations

This is a flounder, one of many fish species that live on the sea bed, lying flat on their sides! Their markings help them to blend in with their surroundings. If they lie very still they can hardly be seen. Some species of flat fish are able to change their markings to suit the environment, like a chameleon.

These types of fish have bodies that are adapted to living on the sea bed- their eyes are both located on one side of their body and their gills are able to pump out sand.

Species include plaice, flounder, sole turbot aand halibut.



Clownfish and Anemones

Clownfish and anemones live together in the warm oceans and seas of the world. They can be found in shallow water hiding near rocky ledges and among coral reefs.

Anemones have stinging tentacles that they use to capture their prey. It seems unusual that a fish would want to swim among these tentacles and make an anemone its home! But this is exactly what a clownfish does.

Clownfish have a special mucous coating on their skin that protects them from the stingers on the anemone. This is why they are able to swim among the tentacles without being hurt. The anemone is the perfect hiding spot for the clownfish because other predators stay away from the anemone to prevent being stung!

The anemone also benefits from having the clownfish nearby. The clownfish defends the anemone from predators and their faeces encourages the growth of algae, providing nutrients for the anemone. The movement of the clownfish also increases water circulation, thereby increasing the chance of small prey approaching close enough for the anemone to catch.

The clownfish and the anemone are perfect partners. Each provides the other with an advantageous environment making it possible for both to thrive.