**The Deep Sea Zones**

The open ocean, or pelagic zone, is divided into several layers, based on depth. The first layer is the epipelagic, which extends down to around 200m, which is also around the lowest depth that light can penetrate. This is the layer that people know most about, as it is relatively easy to explore with conventional diving equipment. In the epipelagic, the fish, [sea mammals](http://www.allthesea.com/Sea-Mammals.html), and other **sea life>**that most people are familiar with are found, even if they can be a little weird. Because it's so familiar, we're not going to talk anymore about this layer.





**The Mesopelagic Zone**

The mesopelagic zone is sometimes called the "twilight zone" of the ocean. The photic zone above, and the darkness below border this area. It's in this zone where you start to see bioluminescence on all sorts of animals. From this point on down, food becomes something of a scarcity and some animals migrate up to the surface at night to feed. The rest rely on food that falls down from above, as well as eating each other. Because sometimes the only things to eat may be bigger than the hunter, many [sea animals](http://www.allthesea.com/) have developed long sharp teeth, and expandable jaws and stomachs. If you scroll down, you'll see a few of the animals from these depths.

**The Bathypelagic Zone** The bathypelagic zone extends down from 1000m to 4000m, which is getting pretty deep. The only light is from bioluminescent organisms, and the only food is what trickles down from above, or from eating other animals. Although the water pressure at this depth is considerable, there are many different representatives of the normal marine groups: fish, mollusks, jellies, and crustaceans. Sperm whales can dive down into this zone when hunting giant squid. At these depths and below, most animals are either black or red in color. Because only the faintest blue/green light penetrates this deep, and most bioluminescence is blue in color, red is not reflected and looks black.

**The Abyssopelagic Zone** The name of this zone comes from the Greek meaning "no bottom", and refers to the ancient belief that the open ocean was bottomless. It extends from 4000m to the sea floor. The only zone deeper than this is the hadal zone, which includes areas found in deep sea trenches and canyons. This zone is home to pretty inhospitable living conditions, which include near- freezing temperatures and crushing pressures.

**Surviving in the Twilight Zone** Larger animals that live in the **deep sea** often have structures, behaviors, or body chemistries that have evolved to allow them to survive in their unusual environments. These features are called adaptations and describe something about a living creature that helps it to survive in its environment.

Not only is it very dim in this part of the ocean it is also very cold. Food is also harder to find in this deeper water because of the lack of photosynthesis by plants. In addition because of the weight of the water above them these animals live under enormous pressure.

The animals that live in the twilight zone are thought to be descended from animals that live in shallower water. In this sense many of them represent not primitive animals but highly evolved organisms that are able to take advantage of a different place to live and obtain food (niche).

There are also some animals, particularly those on the seabeds that are remarkably similar to their relatives in shallow environments. Brittle stars for example are very similar looking even comparing those that live in rock pools to those that live at over 4000m. In both cases the long arms and ability to be able to sift through mud and detritus (dead bits and pieces that sink to the bottom) mean that brittle stars are pre-adapted for life at depth.

Some of these adaptations may be specific to a particular group of animals while others like bioluminescence or the ability to produce light are an adaptation that has evolved independently in many different groups of animals for different purposes. In the deep sea many animals use bioluminescence to attract mates, to obtain food, to stay in schools, or even for camouflage.

**Surviving in the Twilight Zone - Food** In the twilight zone food is a scarce resource. Much of what is available as food falls from the rich sunlit water above. Occasionally a large animal that dies, such as a whale or large fish, sinks into this region. These rare feasts for scavenging fish are quickly consumed.

Some fish like the primitive jawless fish known as hagfish and lampreys gather round a corpse with surprising speed and eat it by burrowing into the animal and eating it from the inside out.

Far more reliable as a source of food is the constant rain of organic debris or detritus material that represents the remains of organisms from above. In some areas this is so thick that the material is referred to as marine snow.

In recent years scientists working at the Monterey Bay Aquarium Research Institute have made startling discoveries of many large transparent jelly like animals that occupy this part of the sea. These animals include strange creatures called larvaceans, which exude mucus like material, which traps detritus as it falls.

In addition there are large chain like salps, which also filter material from the water and large siphonophores that cast out nets of tentacles that can trap detritus and other material for food. In the past many of these animals have been missed in survey work as they tend to disintegrate into unidentifiable blobs when caught up in nets.

Scientists using Remotely Operated Vehicles (ROV's) have been able to observe such animals in the water using cameras and have also been able to collect some. The role that these jelly like animals in

the food chains of the twilight zone are not well understood but they probably play a crucial role in supporting many of the larger animals in this zone.

Many of the higher animals such as fish rely on capturing other animals for food. Some deep sea fish regularly migrate to feed near the surface, particularly at night when there are fewer predators around. Many **deep sea fish** have small flabby bodies when compared to their relatives near the surface.

If a fish is lucky enough to come across a potential meal then it is likely to eat it. A fish like a [gulper eel](http://www.allthesea.com/Deep-Sea-Fish-Gulper-Eel.html) with its huge mouth can swallow another fish much larger than itself by unhinging its jaws and stretching its mouth around its prey.

Some fish like deep sea anglers use light producing bacteria that live on a special "fishing rod" like fin that hangs over the anglers head and wiggles in the water to attract other animals to come and investigate, and of course to be eaten. [Viperfish](http://www.allthesea.com/Deep-Sea-Fish-Viperfish.html) use lights within its mouth to lure prey into its waiting stomach.

Animals like the cookie cutter shark are also found in this zone. These animals have an extremely sharp set of teeth that are arranged in a circular pattern so that they can quickly take a chunk of flesh out of a large animal like a shark, dolphin or whale that might swim passed.

The fish that live at this level of the ocean don't often get the opportunity to eat and must therefore take advantage of any food that is available.

**Surviving in the Twilight Zone - Oxygen** Even though there is no photosynthesis that takes place, oxygen levels in most of the twilight zone is sufficient so as not to represent a survival problem for animals that live at this depth. Lower temperatures increase the solubility of gases and most twilight zone waters have 4 - 5% oxygen content; this compares with about 3.5% - 7% in the sunlit zone. There are however some areas which are called oxygen minima in which there is little exchange of water with the surface layers that result in water that is very low in oxygen content, less than 1%.

**Surviving in the Twilight Zone - Protection** Animals that live in the twilight zone have evolved a variety of strategies for preventing themselves from becoming dinner. Many animals have large eyes and are able to see thirty times better in dim light than humans.

Camouflage is one strategy that is useful as to not be seen is to avoid being eaten. Many animals try to merge into the background by avoiding creating a outline against the light coming from the surface. Transparent animals are common in this zone as they allow light to pass through them and do not create a shadow. Examples of these include the larvaceans mentioned earlier, jellies, and many fish eggs and larvae. Others may have silvery surfaces that reflect light.

Another strategy used in deeper water is body color. Animals that are black are easily hidden in the darkness, as are red animals. However the production of black pigments is energy expensive, as many pigments must be mixed to produce black. Many **deep sea fish** such as orange roughly have a distinct red color when seen on the surface.

In the same way many shrimp and jellies that inhabit these water are red or purple in color in normal light. Because of the absence of red light these animals are invisible in the twilight zone. Red is also a single pigment and much simpler to make than black pigment although having the same effect.

An interesting adaptation allows the [black dragonfish](http://www.allthesea.com/Deep-Sea-Fish-Dragonfish.html) to produce a red light from a special photophore beneath the eye. This red light allows the dragonfish to be able to see animals without being seen itself because of the inability of most animals to see red light. Its a bit like a night scope for fish finding.

Deep sea squid and some jellies protect themselves by squirting an ink which is bioluminescent. The

ink glows in the dark when in contact with seawater and confuses a predator, which attacks the ink while the potential food makes a quick escape.

**Surviving in the Twilight Zone - Reproduction** Living in the deep sea does present some problems for animals when it comes to producing the next generation. Many invertebrates reproduce in deep water environments in much the same way that they do close to the surface.

This involves producing vast quantities of sperm and eggs, which are then released into the water column and carried by the currents that occur below the surface to allow fertilization.

For **sea animals** like fish and squid finding a mate can be extremely difficult where animals are few and far between. Animals with good vision can focus on attractive lights or shapes. Others may be able to detect chemical smells in the water.

Lantern fish have small body organs on the side of their body called photophores that can produce light. These are arranged in specific patterns that can be seen from a distance and used to recognize potential mates.

Anglerfish have evolved a strange strategy that allows males to remain attached to female anglerfish once they have managed to find them following a chemical smell.

The tiny male angler bites onto the female and becomes permanently attached, gaining his food needs from the female. Eventually his mouth fuses to her body, his blood vessels merge with hers, and he becomes little more than an attached sperm sac. Sometimes several males can be attached to the same female.

**Surviving in the Twilight Zone - Pressure** For every increase in depth of 10m there is an increase in pressure equivalent to air pressure at sea level - that is, at sea level pressure is 1atmosphere, at 10m the pressure is 2 atmospheres (atm.), at 100m the pressure is 11 atm and at 1000m the pressure will be over 100atm.

This represents a big problem to humans, as our bodies would be crushed at such high pressures. This is because we have large air spaces inside our bodies. Because of this humans are normally limited to a maximum depth when [SCUBA diving](http://www.allthesea.com/Deep-Sea-Diving.html) of around 70m. In order to be able to venture further pressurized submersible vehicles have been developed that protect our bodies from being crushed.

For animals that have bodies that are completely filled with water an increase in pressure has little effect. For this reason jellies, salps, squid etc. have no difficulty when moving even quite large distances through the water column.

Many fish have a swim bladder that contains gases. The volume of gas in the bladder can be adjusted as they move up and down, in much the same way that a diver alters their buoyancy using an inflatable vest.

When fish are caught in trawl nets and brought quickly to the surface they often explode or are deformed by their expanding swim bladder; with a decrease in external pressure gases in the swim bladder expand to push out many body parts. This would be unlikely to occur as animals move up and down in the water column on their own.

**Surviving in the Zone of Darkness** From about 1000m to the bottom of the ocean is completely dark. Many of the animals that have been described in the section dealing with the twilight zone can also inhabit this zone which is on average about 4000m deep with a number of trenches and basins that can be as deep as 7000m.

In this zone the water is also extremely cold with temperatures that are usually down to 1oC or less at 4000m. This water however is also very high in nutrients having accumulated materials that have fallen from above and off the continents.

In addition oxygen levels are surprisingly high with usually about 5 - 6% oxygen content. Again the cold water improves the solubility of dissolved gases such as oxygen.

This region of the ocean is very poorly understood and many of the processes that operate within it only beginning to be explored. Life on the bottom of the ocean floor has been studied in a number of sites and has been shown to be a lot more abundant than was previously expected. In the last two decades ROV's and manned submersibles have made a number of visits to the ocean floor and there have been some astounding discoveries.

On most of the world�s oceans the bottom consists of a mud like ooze that contains much detritus material. Animals that can inhabit this environment need to be able to move across the ooze without sinking.

For animals such as brittle stars with long tentacle like arms this is no problem. Other animals such as feather stars have long waving tentacles that can strain food out of the water above the mud while the body of the animal sits on the mud surface.

An unusual species of fish called a tripod fish is also found living at these enormous depths. These fish have three of the their fins greatly extended to form a tripod which allows the fish to move easily over the soft substrates without sinking into it.

**Deep Sea Fish - Adaptations**

**Coloration**

Fish display a wide variety of colors and color patterns. Skin coloration can have many functions. Many fish have color patterns that help them blend in with their environment. This may allow the fish to avoid being seen by a predator. Some fish, such as the flat fishes, can change their skin coloration to match the surrounding habit.

Fish can also have disruptive markings to hide body parts. Species such as the jackknife fish high-hat and some angelfishes have dark lines that run through the eyes. These lines may serve to hide the eyes so that other animals cannot tell where the fish is looking or even if it is a fish. Also horizontal lines may be a sight line for aiming attacks on prey. Some fishes, like butterfly fishes, have spots on their body that resembles eyes. This may serve to confuse prey and predators alike. In addition to coloration, some fish, like the sea dragon, have body shapes that can further mimic their habitat.

Fish coloration can also be useful in catching prey. Many sharks exhibit coloration known as counter shading. Sharks that have counter shading are dark on the dorsal (upper) side and light on the ventral (lower) side. With this color scheme any prey looking down on the shark will see a dark shark against a dark sea bottom, making it hard to detect the shark. Conversely, any prey looking up at the shark, will see the light belly of the shark on the light background of the ocean surface water lit by the sun or moon.

Coloration can also be used to advertise. Fishes like the darters and sticklebacks, may use color to attract and recognize potential mates.

**Light Organs** Some [marine fish](http://www.allthesea.com/Deep-Sea-Fish-Marine-Fish.html) have the ability to produce light through bioluminescence. Most light producing fish live in mid-water or are bottom dwelling deep sea species. In fish, bioluminescence can occur two different ways, through symbiotic bacteria living on the fish, or through self-luminous cells called photophores. Some species of deep sea angler fish may use this light to attract prey, while others, like the Atlantic midshipman, may use this light to attract mates.

**Venom** Many fish may use venom as a form of defense. Most venomous fish deliver the toxins through the use of a spine. Venomous spines are found in a wide variety of fish including stingrays, chimaeras, scorpionfishes, catfishes, toadfishes, rabbit fishes, and stargazers. Venomous spines can have poison glands along the grove of the spine, as with stingrays, or at the base of the spine as in some catfish.

**Electric Organs** Elasmobranchs (sharks, skates, and rays) possess an electric sense system known as the ampullae of Lorenzini. This system consists of many tiny gel filled canals, positioned on the head of the fish. Through this system these fishes are able to detect the weak electric fields produced by prey. It is also believed that these fish can use this sense to detect the electric fields they induce when swimming through the earth's magnetic field, as a sort of compass. Since the fishes are able to generate the fields they detect, this is a form of active electro-orientation.

Some species of skates and rays also have electric producing organs. The electric rays have paired electric organs located on either side of the head, behind the eyes. With these organs, electric rays are able to shock and stun their prey. The skate's electric producing organs are located near the tail. However, these electric organs only produce weak electric fields not capable of stunning prey. Researchers believe that the skate electric organs are used for communication and mate location.

The electric eel can also produce electric fields. These eels use weak electric fields for navigation, prey location, and communication. Additionally these eels and can produce strong electric fields to stun potential prey. The strength of the "shock" is related to the size of the eel, with larger individuals being able to produce more of a "shock

<http://www.allthesea.com/Deep-Sea-Fish.html>

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| Deep Sea Fishes |
| [Apple Anemone](http://www.allthesea.com/Deep-Sea-Fish-Apple-Anemone.html) | [Angler Fish](http://www.allthesea.com/Deep-Sea-Fish-Angler-Fish.html) | [Dragonfish](http://www.allthesea.com/Deep-Sea-Fish-Dragonfish.html) | [Bloodybelly Comb Jelly](http://www.allthesea.com/Deep-Sea-Fish-Bloodybelly-Comb-Jelly.html) |
| [Shining Tubeshoulder](http://www.allthesea.com/Deep-Sea-Fish-Shining-Tubeshoulder.html) | [Midwater Jelly](http://www.allthesea.com/Deep-Sea-Fish-Midwater-Jelly.html) | [Jelly Fish](http://www.allthesea.com/Deep-Sea-Fish-Jelly-Fish.html) | [Hatchet Fish](http://www.allthesea.com/Deep-Sea-Fish-Hatchet-Fish.html) |
| [Gian Red Mysid](http://www.allthesea.com/Deep-Sea-Fish-Giant-Red-Mysid.html) | [Gulper Eel](http://www.allthesea.com/Deep-Sea-Fish-Gulper-Eel.html) | [Fangtooth](http://www.allthesea.com/Deep-Sea-Fish-Fangtooth.html) | [Giant Siphonophore](http://www.allthesea.com/Deep-Sea-Fish-Giant-Siphonophore.html) |
| [Deep Sea Brittle Star](http://www.allthesea.com/Deep-Sea-Fish-Deep-Sea-Brittle-Star.html) | [Crab With Golf Ball](http://www.allthesea.com/Deep-Sea-Fish-Crab-With-Golf-Ball.html) | [Common Market Squid](http://www.allthesea.com/Deep-Sea-Fish-Common-Market-Squid.html) | [Cold Seep Clam](http://www.allthesea.com/Deep-Sea-Fish-Cold-Seep-Clam.html) |
| [Bristlemouth](http://www.allthesea.com/Deep-Sea-Fish-Bristlemouth.html) | [Lanternfish](http://www.allthesea.com/Deep-Sea-Fish-Lanternfish.html) | [Johnsons Sea Cucumber](http://www.allthesea.com/Deep-Sea-Fish-Johnsons-Sea-Cucumber.html) | [Filetail Catshark](http://www.allthesea.com/Deep-Sea-Fish-Filetail-Catshark.html) |
| [Predatory Tunicate](http://www.allthesea.com/Deep-Sea-Fish-Predatory-Tunicate.html) | [Red Sea Fan](http://www.allthesea.com/Deep-Sea-Fish-Red-Sea-Fan.html) | [Pom-Pom Anemone](http://www.allthesea.com/Deep-Sea-Fish-Pom-Pom-Anemone.html) | [Pacific Hagfish](http://www.allthesea.com/Deep-Sea-Fish-Pacific-Hagfish.html) |
| [Pacific Blackdragon](http://www.allthesea.com/Deep-Sea-Fish-Pacific-Blackdragon.html) | [Oarfish](http://www.allthesea.com/Deep-Sea-Fish-Oarfish.html) | [Mushroom Soft Coral](http://www.allthesea.com/Deep-Sea-Fish-Mushroom-Soft-Coral.html) | [Midwater Eelpout](http://www.allthesea.com/Deep-Sea-Fish-Midwater-Eelpout.html) |
| [Hula Skirt Siphonophore](http://www.allthesea.com/Deep-Sea-Fish-Hula-Skirt-Siphonophore.html) | [Squat Lobster](http://www.allthesea.com/Deep-Sea-Fish-Squat-Lobster.html) | [Spotted Ratfish](http://www.allthesea.com/Deep-Sea-Fish-Spotted-Ratfish.html) | [Spiny King Crab](http://www.allthesea.com/Deep-Sea-Fish-Spiny-King-Crab.html) |
| [SpermWhale](http://www.allthesea.com/Deep-Sea-Fish-Sperm-Whale.html) | [Slender Snipe Eel](http://www.allthesea.com/Deep-Sea-Fish-Slender-Snipe-Eel.html) | [Sea Whip](http://www.allthesea.com/Deep-Sea-Fish-Sea-Whip.html) | [Rockfish](http://www.allthesea.com/Deep-Sea-Fish-Rockfish.html) |
| [Pink Sea Urchin](http://www.allthesea.com/Deep-Sea-Fish-Fragile-Pink-Sea-Urchin.html) | [Tadpole Snailfish](http://www.allthesea.com/Deep-Sea-Fish-Tadpole-Snailfish.html) | [Viper Fish](http://www.allthesea.com/Deep-Sea-Fish-Viperfish.html) | [Imperator Angelfish](http://www.allthesea.com/Deep-Sea-Fish-Imperator-Angelfish.html) |
| [Rattail Fish](http://www.allthesea.com/Deep-Sea-Fish-Rattail-Fish.html) | [Toadfish](http://www.allthesea.com/Deep-Sea-Fish-Toadfish.html) | [Crocodile Needlefish](http://www.allthesea.com/Deep-Sea-Fish-Crocodile-Needlefish.html) | [Sablefish](http://www.allthesea.com/Deep-Sea-Fish-Sablefish.html) |
| [Goosefish](http://www.allthesea.com/Deep-Sea-Fish-Goosefish.html) | [Pupfish](http://www.allthesea.com/Deep-Sea-Fish-Pupfish.html) | [Quillback](http://www.allthesea.com/Deep-Sea-Fish-Quillback.html) | [Oyster Toad Fish](http://www.allthesea.com/Deep-Sea-Fish-Oyster-Toad-Fish.html) |
| [Arawana Fish](http://www.allthesea.com/Deep-Sea-Fish-Arawana-Fish.html) | [Swordfish](http://www.allthesea.com/Deep-Sea-Fish-Swordfish.html) | [Nauplius](http://www.allthesea.com/Deep-Sea-Fish-Nauplius.html) | [Needlefish](http://www.allthesea.com/Deep-Sea-Fish-Needlefish.html) |
| [Balloon Fish](http://www.allthesea.com/Deep-Sea-Fish-Balloon-Fish.html) | [Lungfish](http://www.allthesea.com/Deep-Sea-Fish-Lungfish.html) | [Paddlefish](http://www.allthesea.com/Deep-Sea-Fish-Paddlefish.html) | [Tilefish](http://www.allthesea.com/Deep-Sea-Fish-Tilefish.html) |
| [Cuttlefish](http://www.allthesea.com/Deep-Sea-Fish-Cuttlefish.html) | [Pilchards](http://www.allthesea.com/Deep-Sea-Fish-Pilchards.html) | [Zebrafish](http://www.allthesea.com/Deep-Sea-Fish-Zebrafish.html) | [Lampreyfish](http://www.allthesea.com/Deep-Sea-Fish-Lampreyfish.html) |
| [Anchovy Fish](http://www.allthesea.com/Deep-Sea-Fish-Anchovy-Fish.html) | [X-ray Tetra Fish](http://www.allthesea.com/Deep-Sea-Fish-X-ray-Tetra-Fish.html) | [Xiphias Gladius](http://www.allthesea.com/Deep-Sea-Fish-Xiphias-Gladius.html) | [Anemonefish](http://www.allthesea.com/Deep-Sea-Fish-Anemonefish.html) |
| [Grunion Fish](http://www.allthesea.com/Deep-Sea-Fish-Grunion-Fish.html) | [Lionfish](http://www.allthesea.com/Deep-Sea-Fish-Lionfish.html) | [Irukandji Jellyfish](http://www.allthesea.com/Deep-Sea-Fish-Irukandji-Jellyfish.html) | [Killifish](http://www.allthesea.com/Deep-Sea-Fish-Killifish.html) |
| [Starfish](http://www.allthesea.com/Deep-Sea-Fish-Starfish.html) | [Yellowfin Tuna Fish](http://www.allthesea.com/Deep-Sea-Fish-Yellowfin-Tuna-Fish.html) | [Sawfish](http://www.allthesea.com/Deep-Sea-Fish-Sawfish.html) | [Stickleback](http://www.allthesea.com/Deep-Sea-Fish-Stickleback.html) |
| [Sockeye Salmon](http://www.allthesea.com/Deep-Sea-Fish-Sockeye-Salmon.html) | [Rasbora](http://www.allthesea.com/Deep-Sea-Fish-Rasbora.html) | [Anemone Crab](http://www.allthesea.com/Deep-Sea-Fish-Anemone-Crab.html) | [Goldfish](http://www.allthesea.com/Deep-Sea-Fish-Goldfish.html) |
| [Crayfish](http://www.allthesea.com/Deep-Sea-Fish-Crayfish.html) | [Bluefish](http://www.allthesea.com/Deep-Sea-Fish-Bluefish.html) | [Breamfish](http://www.allthesea.com/Deep-Sea-Fish-Breamfish.html) | [Flounder Fish](http://www.allthesea.com/Deep-Sea-Fish-Flounder-Fish.html) |
| [Haddock](http://www.allthesea.com/Deep-Sea-Fish-Haddock.html) | [Halibut](http://www.allthesea.com/Deep-Sea-Fish-Halibut.html) | [Angelfish](http://www.allthesea.com/Deep-Sea-Fish-Angelfish.html) | [Neon Tetra](http://www.allthesea.com/Deep-Sea-Fish-Neon-Tetra.html) |
| [Rainbow Fish](http://www.allthesea.com/Deep-Sea-Fish-Rainbow-Fish.html) | [Minnow](http://www.allthesea.com/Deep-Sea-Fish-Minnow.html) | [Herring](http://www.allthesea.com/Deep-Sea-Fish-Herring.html) | [Moray Eel](http://www.allthesea.com/Deep-Sea-Fish-Moray-Eel.html) |
| [Krill](http://www.allthesea.com/Deep-Sea-Fish-Krill.html) | [Rainbow Trout](http://www.allthesea.com/Deep-Sea-Fish-Rainbow-Trout.html) | [Atlantic Herring](http://www.allthesea.com/Deep-Sea-Fish-Atlantic-Herring.html) | [Poisonous Fish](http://www.allthesea.com/Deep-Sea-Fish-Poisonous-Fish.html) |
| [Catfish](http://www.allthesea.com/Deep-Sea-Fish-Catfish.html) | [Filefish](http://www.allthesea.com/Deep-Sea-Fish-Filefish.html) | [Dogfish](http://www.allthesea.com/Deep-Sea-Fish-Dogfish.html) | [Piranha](http://www.allthesea.com/Deep-Sea-Fish-Piranha.html) |
| [Perch Fish](http://www.allthesea.com/Deep-Sea-Fish-Perch-Fish.html) | [Butterfly Fish](http://www.allthesea.com/Deep-Sea-Fish-Butterfly-Fish.html) | [Frogfish](http://www.allthesea.com/Deep-Sea-Fish-Frogfish.html) | [Bichir](http://www.allthesea.com/Deep-Sea-Fish-Bichir.html) |
| [Blackside Hawkfish](http://www.allthesea.com/Deep-Sea-Fish-Blackside-Hawkfish.html) | [C-O Sole](http://www.allthesea.com/Deep-Sea-Fish-C-O-Sole.html) | [Lingcod](http://www.allthesea.com/Deep-Sea-Fish-Lingcod.html) | [Palette Surgeonfish](http://www.allthesea.com/Deep-Sea-Fish-Palette-Surgeonfish.html) |
| [English Sole](http://www.allthesea.com/Deep-Sea-Fish-English-Sole.html) | [White Sea Perch](http://www.allthesea.com/Deep-Sea-Fish-White-Sea-Perch.html) | [Zander](http://www.allthesea.com/Deep-Sea-Fish-Zander.html) | [Sunfish](http://www.allthesea.com/Deep-Sea-Fish-Sunfish.html) |
| [Squids](http://www.allthesea.com/Deep-Sea-Fish-Squids.html) |  |  |  |