



PRESENTS

# OCEAN ZONIFICATION

## EPIPELAGIC (0-200 M)

The epipelagic zone is the upper layer of the ocean where sunlight penetrates; it usually reaches around 11 km in depth. This zone covers about 360 million km<sup>2</sup> with an estimated volume of 1,300 million km<sup>3</sup>.

NORTHERN GANNET (*Morus bassanus*)  
IMPERIAL SHAG (*Phalacrocorax atriceps*)  
10 - 20 meters

## PELAGIC ZONE

This area is commonly referred to as "open ocean". It starts after the continental shelf drop off and includes the water column from the surface to the ocean floor. Species that live here are known as pelagic species.

## NERITIC ZONE

It includes the shallow marine environments over the continental shelf. Vertically, it can reach approximately 200 meters in depth.

Based on horizontal distance from the coast, the ocean is divided into neritic and pelagic.

## SUNLIGHT PENETRATION (vertical categorization)

### PHOTIC ZONE

Sunlight is able to penetrate this section of the water column. It includes the epipelagic zone.

### APHOTIC ZONE

Less than 1% of sunlight reaches this layer of the water column. It spans from the deepest layer of the mesopelagic zone, down to the hadal zone.

### DEMERSAL ZONE

This refers to the water column near ocean floor. Its depth varies and covers from the shallow areas all the way to the deepest and darkest parts of the ocean.

### BENTHIC ZONE

The sea floor is also known as the benthos and it can be used to describe the sea floor at various depths. Species living on the ocean floor with limited or no mobility are also called benthos or benthic organisms.

## MESPELAGIC (200-1,000 M)

Sunlight quickly fades in the first meters of this zone, and continues to disappear as depth increases.

KILLER WHALES (*Orcinus orca*)  
100-150 meters

ELEPHANT SEAL (*Mirounga sp.*)  
1,700 meters

## BATHYPELAGIC (1,000-4,000 M)

Also known as the bathyal zone, there is no sunlight, hydrostatic pressure increases and the average water temperature is 4°C. As depth increases, dissolved oxygen decreases.

TELESCOPE OCTOPUS (*Amphitretus pelagicus*)  
150-2,000 meters

SPERM WHALE (*Physeter macrocephalus*)  
400-3,000 meters

PELICAN FISH (*Eurypharynx pelicanoides*)  
500-3,000 meters

ATOLLA JELLYFISH (*Atolla wryvillii*)  
1,000-4,000 meters

## ABYSSOPELAGIC (4,000-6,000 M)

This zone is characterized by the complete darkness and water temperature varies between 3-2°C. Oxygen concentration is minimal, but there is dissolved nitrogen, phosphorus and silica that result from the decomposition of organic matter as it travels down from the upper layers.

ABISSAL SPIDER FISH (*Bathyporeia longipes*)  
2,600-5,600 meters

COMB JELLIES  
6,800 meters

MARIANA SNAILFISH (*Pseudoliparis swirei*)  
8,000 meters

## HADOPELAGIC (6,000-11,000 M)

Also known as the hadal zone, this is where deep ocean trenches are located, some surpassing the 6,000 meters in depth. The Mariana Trench is the deepest trench in the world, located in the Western Pacific 11,300 meters below the surface.

HADAL AMPHIPODS  
>6,000 meters

SEA LION (*Otaria flavescens*)  
135 meters

WHITE SHARK (*Carcharodon carcharias*)  
250-500 meters

EMPEROR PINGUIN (*Aptenodytes forsteri*)  
530 meters

LEATHERBACK SEA TURTLE (*Dermochelys coriacea*)  
950 meters

GIANT PACIFIC OCTOPUS (*Eteocrotopus dofleini*)  
hasta los 1,500 meters

SIXGILL SHARK (*Hexanchus sp.*)  
400-1,800 meters

FLABBY WHALEFISH (*Gyrinotinus grahami*)  
3,575 meters

DEEP-SEA SEA CUCUMBER (*Scotoplanes*)  
1,000-5,000 meters

AMPHIPODS  
5,300 meters

SOFT CORALS (*Alcyonacea*)  
1,500-5,850 meters

POLYPLACOPHORA OR CHITONS  
6,895 meters

HADAL SNAILFISH (*Pseudoliparis amblystomopsis*)  
6,000-7,500 meters

NAUTILUS (*Nautilus*)  
600 meters

BUBBLEGUM CORAL (*Paragorgia arborea*)  
200-1,300 meters

GIANT TUBE WORM (*Riftia pachyptila*)  
1,500-4,000 meters

## THE SHALLOWEST OCEAN

The average depth in the Arctic ocean is 1,050 meters.

## THE DEEPEST OCEAN

The Pacific Ocean is the deepest ocean, with at least 6 regions with depths greater than 10,000 meters.

## OCEAN ZONES BASED ON WATER DENSITY

The ocean can be divided according to the weight of water per unit volume.

**Mixed surface layer.**  
The temperature and salinity of the water in this layer is constantly changing due to its contact with the air.

**Pycnocline or transition layer.**  
Changes in density are not frequent since water movement is more stable.

**Deep water layer.**  
Water in this layer is colder and denser than in the layers above.

The deepest spot in the ocean is located between 10.9 and 11.3 km from the surface and is in the Mariana Trench, near the Philippines.