

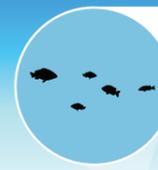
What's that dot? Oh, just the largest Blue Whale ever recorded. This is the true scale of the ocean - it makes a Blue Whale look tiny. Here's an average person next to the whale for comparison. Feeling small yet?



EXTREME ENVIRONMENTS

DEEP SEA

Around 90% of all marine life lives in the top 200 metres of the Earth's water, including lakes. This range is known as the sunlight zone, or formally as the photic zone, taken from the Greek words for 'well lit'.



Covering **over 70%** of earth's surface, the ocean is a fascinating place. Due to the incredible depths, **99%** of our planet's habitable space is in the ocean - and we have only explored **5%** of it to this day!

We estimate that **50% - 80%** of all life on Earth lives under the sea, but due to our limited knowledge, we are only able to theorise how much life, and how many species, call the ocean their home. Researchers have suggested that **up to 700,000** species still remain undiscovered.

When we think of ocean life, we typically picture coastal dwelling species that live in the upper layer of the ocean. The truth is, these species are only a fraction of the animals that live in the ocean, and the deeper you dive, the more unique and alien the creatures of the ocean seem.

At around **200 metres** deep, sunlight struggles to penetrate the water, and there is very little visible light. At **1,000 metres**, the ocean is in **complete darkness**. Not only do the creatures at these depths have to cope with the **lack of light**, but they also have to withstand both **extremely low temperatures** and **immense pressures**.

At sea level, the pressure acting on the outside of our bodies is equal to **one atmosphere (14.7psi)**. For every **10 metres** you dive under the ocean, the pressure **increases by one atmosphere**, meaning that the pressure at **1,000 metres** would be **100 times** stronger than on land. At the deepest point of the ocean, the pressure is nearly **1100 atmospheres!**

The deepest known area of the ocean is named the **Challenger Deep**. At **10,916 metres** at the deepest point, we could hide **Mount Everest** down there, and there would still be **over a mile** of water above it. The most amazing fact about this area is that we've actually explored down there - **twice!** Specially designed submersible vehicles have been successfully piloted to the bottom of the Challenger Deep in both **1960** and **2012!**

SUNLIGHT ZONE
0 - 200 metres 20°C - 4°C

TWILIGHT ZONE
200 - 1000 metres 20°C - 4°C

MIDNIGHT ZONE
1000 - 4000 metres 4°C - 2°C

ABYSSAL ZONE
4000 - 6000 metres 2°C - 1°C

HADAL ZONE
6000 - 10911 metres 1°C - 0°C

332.35m - Deepest SCUBA dive. This world record was set by Ahmed Gabr in 2014, breaking the previous record by only 14.1m.



324m - The height of the Eiffel Tower, from base to tip. The illustration to the left shows a blue whale for scale.



830m - Height of the Burj Khalifa, the tallest building in existence, over two and a half times taller than the Eiffel Tower.



FACT - Living in near perpetual darkness, life in the Twilight Zone and below often use bioluminescence to communicate, lure prey, and to defend themselves.



FACT - We've only mapped around 10% of the sea floor meaning that we have to estimate the other 90% with satellite measurements.



FACT - In fact, bioluminescence can be found throughout the ocean, whereas there are only a few species that exhibit this trait on land.



3,700m - The average depth of the ocean. The seafloor is bumpy, sloping and mountainous, rather than flat. While areas of the ocean are much deeper, this figure is the average seafloor depth.



2,992m - Deepest recorded whale dive by the Cuvier's beaked whale. These 6m long whales usually only dive to a depth of around 2,000m.



FACT - Areas of the sea floor contain hydrothermal vents - geyser like fissures, where water meets magma under the earth's plates. The vents are rich in chemicals, and can spew water as hot as 460°C.



FACT - The biodiversity in the ocean is much wider than on land, with life inhabiting all depths of the ocean, adapting to the unique challenges of those environments.



FACT - Despite the high temperatures and the toxic waters around them, many animals have adapted to call these vents their home... and they're pretty happy there.



6,000m - The depth at which the Hadal Zone begins. The name refers to Hades, the ancient Greek god of the underworld.



FACT - Areas of the ocean in the Hadal Zone lie within long, narrow trenches. There are only 46 Hadal habitats in total, and all of the trenches together occupy less than 0.25% of the entire seafloor.



FACT - Despite the crushing pressure and the freezing temperatures, life can still be found in the Hadal Zone. Many of these organisms live at the bottom and on the sides of the trenches.



10,994m - The lowest point of the Mariana Trench, the deepest known trench in the ocean - though science estimates that deeper points may exist.



10,898m - The depth reached by James Cameron in the Deepsea Challenger submersible in 2012. The state-of-the-art submersible was specifically engineered for the Mariana Trench mission.



10,911m - The depth reached by Jacques Piccard and Don Walsh in the Trieste submersible in 1960 - the first team to reach the floor of the Mariana Trench - the deepest known point of the ocean.

