Mesopelagic Zone
(The Twilight Zone)

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What is the Mesopelagic Zone?

• The mesopelagic zone is the layer of the ocean from the range of 200 meters to 1,000 meters (656 feet to 3,281 feet).
• In between the epipelagic and bathypelagic zones
• Very little light reaches this depth of the ocean so it is also referred to as the “Twilight Zone”. The bottom of the mesopelagic zone is defined when no light reaches that point (1,000 meters).
• The temperatures are cold in the mesopelagic zone and decrease with depth (4-20 degrees C).
• The pressure is high and can be up to 1,470 psi, and like the temperature, it increases with depth.
• The amount of dissolved oxygen is very little bellow 500 meters.
• Great ocean Conveyer – water sinks due to salt in the water, density, and the water circulation in the ocean. This brings dissolved oxygen to the deep sea.
The Main Thermocline
Lack of Life in The Mesopelagic Zone

- Because there is not a lot of sunlight reaching the mesopelagic zone, there are no primary producers. There is not enough energy from the sun for photosynthesis to occur.

No plants!
Life in The Twilight World

• The animals in the mesopelagic zone are adapted to life near or virtually in darkness, cold temperatures, and high pressure.

• Most of the animals:
  – Have large eyes (help them see in dark waters)
  – Are small, thin, and dark colors (help them camouflage)
  – Have large teeth and jaws
Bioluminescent Animals

- Some of the animals in this depth have a feature where they can produce their own light (bioluminescent). They have a special organ called photophores that have a glowing bacteria that gives off a blue-green light.
- In exception, the Loosejaw fish produces a red light which is invisible in this depth to other deep sea organisms (Red light cannot reach this depth).
- Bioluminescence give them an advantage by helping them find food, mates, and/or confuse predators (deep-sea shrimp).
List of Animals (midwater animals)

- Angelshark
- Brittle Star
- Coelacanth
- **Clam**
- Copepod
- Crab
- Cuttlefish
- Eels
- Echinoderms
- Fiddler Crab
- **Gastropods**
- **Gray Whale**
- Greenland Shark
- Hatchetfish
- Hermit Crab
- Horseshoe Crab
- **Jellyfish**
- John Dory
- Krill
- Limpet
- Lobster
- **Mollusks**
- Octopus
- Oyster
- **Plankton**
- Pufferfish
- Purple Sea Urchin
- Sand Dollar
- Scallop
- Sea Anemone
- Sea Cucumber
- Sea Star
- Sea Urchin
- Shrimp
- Snail
- **Sperm Whale**
- Sponge
- Squid
- Starfish
- Zooplankton
Diets of Animals in The Twilight Zone

- Animals in this zone consist of: filter feeders, grazers, and predators.
- Some animals migrate up to the epipelagic zone for feeding.
- Some animals feed off of the plant matter and algae that falls from above.
- Most of the animals that eat other animals in this zone don’t chase for their prey, they lure them in or simply wait for their prey to come to them to conserve energy.
Decayed matter and algae from surface

Filter Feeders

Fish

Krill etc.

FISH

Whales
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<th>Biotic Factors</th>
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| At night some organisms ascend to shallower depths (epipelagic zone) and return to the mesopelagic zone for the day. They bring oxygen, nutrients, and some bioluminescence. | • Water  
• Light  
• Temperature  
• pH  
• Salinity  
• Nutrient supply  
• Dissolved gases  
• Pressure  
• Tides  
• Currents  
• Waves |
Currents

The great ocean conveyor is a constant circulation that brings oxygen to the oceans depths.
Works Cited


