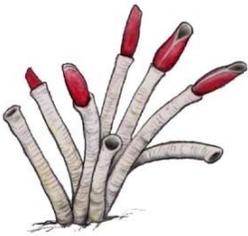


## Extreme Adaptations of the Deep

1. **Matching Game:** Life in the deep-sea environment is anything but easy. The creatures of the deep have adapted to the extremes of our planet including high and low temperatures, extreme pressure, and complete darkness at depths of below 600 feet. Animals that survive in these extreme environments are known as **extremophiles**. Match the extremophile to their environment below. As you match, think about what adaptations might be necessary to live in these ecosystems? Why? (*Helpful hint: use Monterey Bay Aquarium Research Institute [MBARI's Deep-Sea Guide](#) to explore these species and ecosystems*)

Giant Tube Worm



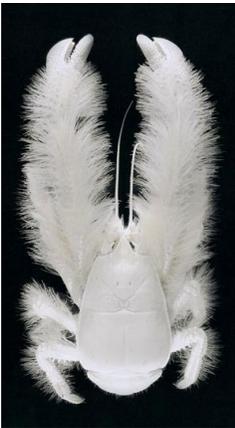
Hagfish



Deep sea trench



Yeti Crab



Anglerfish



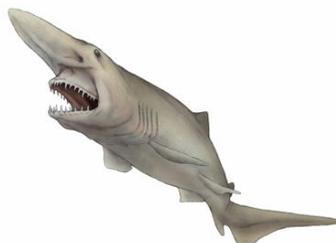
Hydrothermal vents



Dumbo Octopus



Goblin shark



Whale fall



## Extreme Adaptations of the Deep

**2. Marine Mammals of the Deep:** While marine mammals could not live indefinitely in the deep ocean, there are some marine mammals that have adapted to diving down to this harsh environment in search of prey. In fact, The Marine Mammal Center's 2<sup>nd</sup> most common patient, the Northern elephant seal is among the top 5 deepest diving marine mammals. Explore the various diving adaptations below and describe how they may benefit a marine mammal diving over 600 feet deep.

a. Large eyes

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b. Vibrissae (whiskers)

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c. Collapsing lungs

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d. Reduced heart rate

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e. Other?

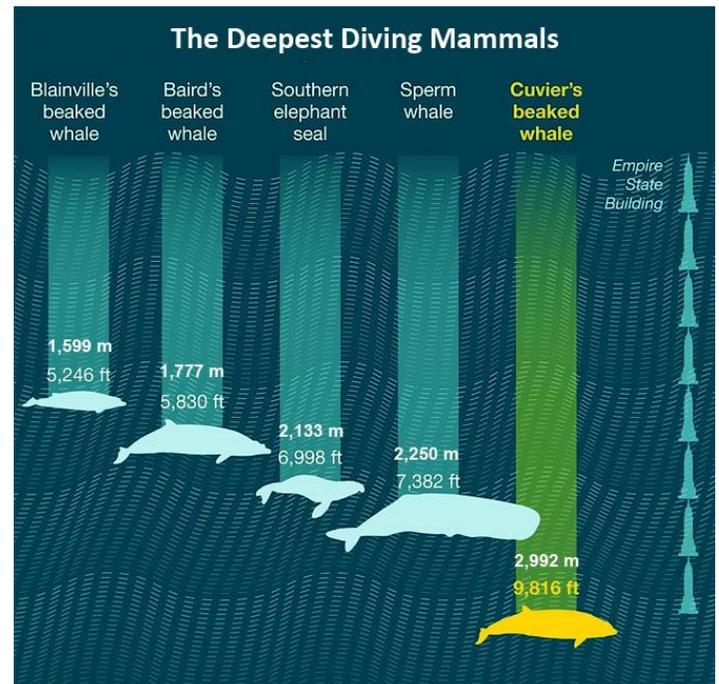
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**3. The Ghosts Below:** Even the spooky creatures of the deep face similar threats to what our marine mammal patients are rescued for. For example, ocean trash has been found at the bottom of the world’s deepest ocean trench and there are even “ghosts” that haunt the deep called ghost nets. **Ghost nets** are fishing nets and lines that have been left or lost at sea. At depths, these nets can be invisible to the creatures of the deep much like a ghost. Ocean trash and ghost nets can entangle marine creatures and can be accidentally eaten.

**What are some ways you can be a *ghost buster* and protect future generations of marine mammals?** (Helpful hint: explore our [Awareness Campaigns](#) to for inspiration)

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*The Ghost Net Monster made from more than 400 pounds of fishing net found inside a sperm whale that washed ashore in Point Reyes.*



*The Marine Mammal Center’s Entangled Whale Response team disentangling a humpback whale.*

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