

## Marine Mammals diving questions

1. How do marine mammals deal with the extreme pressure they encounter on their dives?  
<http://www.scientificamerican.com/article/how-do-deep-diving-sea-cr/>

2. How do marine mammals deal with oxygen storage? It may help you to learn what scientists have recently discovered about the myoglobin found in Marine Mammals.  
<http://www.bbc.com/news/science-environment-22853482>

3. What kinds of things have human free dive champions learned that have greatly extended their dives? Based on what you have read and heard so far about marine mammals, are there any overlaps in behavior between marine mammals and human free divers?  
<http://nautil.us/issue/22/slow/the-impossible-physiology-of-the-free-diver>

4. How do marine mammals avoid freezing to death while diving?  
Describe how to tag an elephant seal use youtube, <https://www.youtube.com/watch?v=kh-1JkScKEQ> <http://www.actionbioscience.org/biodiversity/costa.html> . When do you do it? how do you choose the right seal? how do you approach them? How do you get the tag attached?

5. Using the links from question 4, what have GPS tags on elephant seals revealed about where elephant seals go and how deep they dive to feed?

6. Examine the attached diagram of a typical Fin Whale feeding dive [http://www.nytimes.com/imagepages/2007/12/10/science/20071211\\_WHALE\\_GRAPHIC.html](http://www.nytimes.com/imagepages/2007/12/10/science/20071211_WHALE_GRAPHIC.html) . Look at the fluking pattern (these are beats of their tail). How hard are they swimming when they dive? How hard are they swimming when they return to the surface?

7. We have recently learned that diving whales can get decompression sickness (The Bends.) <http://www.bbc.com/earth/story/20150115-extreme-divers-defy-explanation> What have we learned, and how might the US navy be putting marine mammals in harms way?

8. Sperm whales are not only diving champions, but they are also incredibly smart. [http://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view\\_article&articles\\_id=61](http://www.adfg.alaska.gov/index.cfm?adfg=wildlifeneews.view_article&articles_id=61) Read about what happens when sperm whales combine these two traits. <http://news.discovery.com/animals/videos/news-thieving-whale-caught-on-tape.htm> Describe what you learn about how Sperm Whales Both Awe and Vex Alaskan Fishermen. If you find this interesting, you can also click to see a video of a sperm whale plucking Cod off of a line.

9. Read the description of the sperm whale from [arkive.org](http://www.arkive.org), <http://www.arkive.org/sperm-whale/physeter-macrocephalus/> and explain how the spermaceti organ can help to regulate buoyancy in sperm whales.