



Octopus

By Ruben Barraza

Octopus

* Octopuses have always caught my interest and have been one of my favorite marine organisms. I find them interesting because of the unique traits they have, including their tentacles and ink. I was also surprised with how smart they are and how it is almost impossible to have them as a pet because they tend to break out of their tanks. In general I felt that this project helped me gain a better understanding of octopuses and answered a lot of



* Little Mermaid Ursula



* Spiderman DR. Octopus

Water Planet

- * Octopuses are without a doubt Heterotrophs because they can not make their own food.
- * They evolved about 408-360 Million years ago in the Devonian period.
- * There are a lot of different kinds of octopus and they can be found anywhere from tidal zones on shore to the very deepest oceans. They usually reside in temperate waters and the tropics or in the muddy bottoms of shallow areas usually in warm waters. However, they can live in all oceans of the world at all depths.

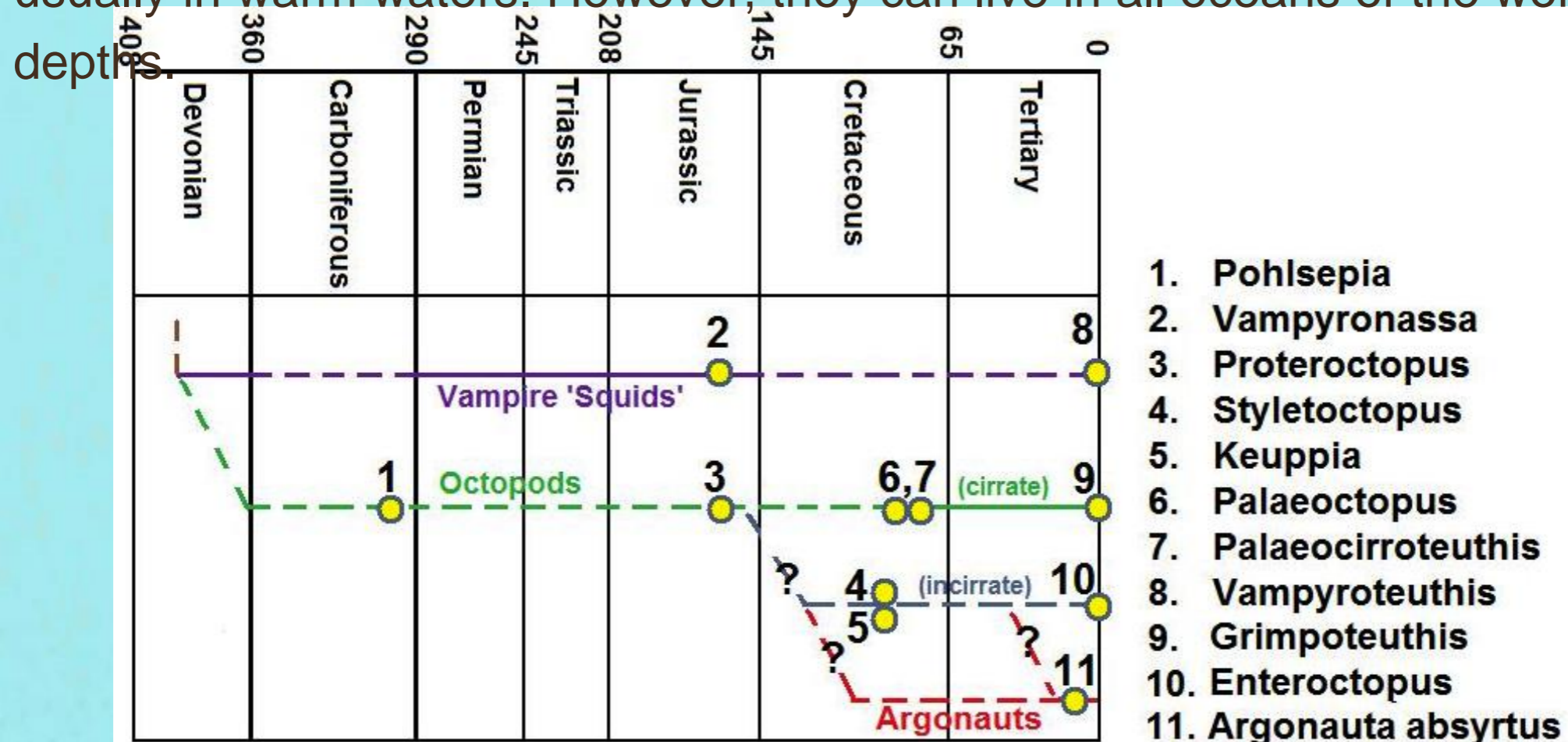


Chart showing the ages and conjectural positions of the fossil octopods

Plate Tectonics

- * The Octopus is not affected by plate tectonics. Instead, they benefit from it. What ends up happening is Plate tectonics causes hydro thermal vents that produces hydrogen sulfide. This leads to chemosynthetic bacteria using hydrogen sulfide as a source of energy instead of sunlight. The bacteria is then fed on by giant clams, mussels, polychaete worms and other invertebrates which then provide a great meal for the octopus.

Seafloor Sediments

- * Octopuses can live in a variety of range of depths. We have some that live in tidal zones which is not deep at all, and some live in depths of 7000m like the Dumbo octopus.
- * Octopuses habitats consist of living in rocks, corals, or burrows and since they are invertebrates they can squeeze through tiny passageways giving them a bigger variety of possible homes. Their homes provide them with protection and a place for the females eggs.
- * Octopuses like to be left alone and have minimal organism interactions but they can occupy spaces with certain animals such as jellyfish and other invertebrates with certain



Sea Water

- * For a better understanding on what water quality is necessary for an octopus I had to do some information on understanding the pH levels and salinity levels suitable for an octopus in an aquarium.
- * The requirements differ on different species but are usually around a pH of 8.0 and making sure low levels of ammonia and nitrates around 5ppm in nitrate and phosphate below 0.1.
- * The salinity should be at 1.025 and the temperature should be around 16-25°C the octopus is not as delicate as this seems but these would be the perfect requirements for healthy living standards.
- * As far as water clarity



<http://commons.wikimedia.org/wiki/File:Lyon-aquarium-female-octopus-care-eggs.jpg>

and light for a suitable living.
Here is a perfect picture of what an octopus needs for a proper environment it shows light on the surface but rocks and corals towards the bottom to be able to hide and have darkness

Atmosphere and Seasons

* Atmospheric Conditions

- * They play an important part in an octopuses life due to the fact they can not live in too cold or hot water which leads to migration for a suitable climate
- * The other atmospheric concern is ocean acidification which can weaken shells of some of their favorite prey this could have a big impact on octopus food availability which may lead to a big feast at first but with shelled organisms declining the octopus could be soon to follow.

* Season Variations

- * Females octopus have a prolonged spawning season (from February to September) with a peak between March and July while the males are mature all the year round.

Currents and Waves

* Current Variation

- * Most octopus are usually bottom dwellers but some species will use the currents along the bottom of the seabed to move from place to place.
- * Some species like the Giant Pacific octopus have their hatchlings use the currents by drifting in them for several months before dropping to the sea floor.

* Wave Conditions

- * an octopus can withstand and is very flexible and sometimes even go into wave washed intertidal rocks to feast on crabs for survival.

Tides, Coasts

- * Tides seem to play an important role for octopus some use the tides to hide from predators and to feed while others spend most of their time in the deep ocean.
- * A great example would be the two spotted octopus which hangs out in the low tide zones and has adapted to the minimum amount of water at times.
- * The two spotted octopus can store water within his body in the mantle cavity where it passes through its gills for survival, It can also swim away from predators if in trouble by using jet propulsion by blowing water out its siphon which is located under the mantle this gives them a speedy get away
- * Octopus can live in shallow waters and also in the deep ocean some can live at depths of

[Dumbo octopus in deep ocean](#)



http://www.aquariumofpacific.org/images/olc/grimpo-2_med.jpg

[Octopus living in shallow waters](#)



http://4.bp.blogspot.com/_a3StuTW8waQ/TKtHrjzUY4I/AAAAAAAAAzk/WkGrzKqL6Wc/s1600/octopus+007.jpg

Scientific Classification

- * Taxonomic Classification:

- * Kingdom: Animalia

- * Phylum: Mollusca

- * Subphylum: Cephalopoda

- * Scientific Name:

- * Octopoda

- * Close Relations:

- * Cuttlefish, squid

- * Location Classification:

- * Nektonobenthos

Marine Organism

- * Octopus feed on Crabs, Lobsters, Clams, Snails, Small fish, Other octopus, and a variety of other species
- * Octopus tend to catch their prey by camouflaging in an environment and grabbing their prey with their tentacles
- * Most octopus bite their prey with their beak that injects paralyzing saliva



This picture shows where the beak is located on an octopus

Predators

- * Adult octopus main predators are eels and sharks.
- * Octopus at larval stage main predators are plankton eaters such as big fish and whales
- * Other animals eat octopus such as harbor seals, sea otters as well as humans



* Sea otter eating an octopus



* Seal eating an octopus

Special Traits



* An octopus can camouflage into its environment and can also lose a limb by using it to distract its predator and then regrow a new limb

* An octopus has the ability to squeeze into very small cracks in the ocean and some tend to have paralyzing saliva



* Octopus has the ability to be able to shoot out ink to confuse its predator and distract them as well

Reproduce

* The octopus has a hectocotylus which is basically an arm covered in rows of sperm.



<http://www.mbari.org/news/homepage/2008/octomate-350.jpg>

Picture of two octopus demonstrating how they reproduce

* Some octopus species mate by inverting the arm directly into the female octopus oviduct while other species detach the arm and give it to the female to use when she is ready to fertilize the eggs.

* Male octopuses die after a few months after mating and females die shortly after their eggs hatch.

* The female octopus guards her eggs until they hatch and stops looking for food to be on full alert. Female octopus also blow on their eggs whenever they get dirty.

* It can take anywhere from 2-10 months for the eggs to incubate depending on



http://37.media.tumblr.com/tumblr_l039dvnZ11szgc3ec1_500.jpg

Octopus protecting her eggs

Pollution/Human Interactions

- * The negative human affect towards octopus would have to be the fact that we consume octopus in many different countries which shortens the population.
- * The positive outcomes that the octopus has is that we are still learning a lot about it and the attention of many people and how it is used is.



<http://static.guim.co.uk/sys-images/Guardian/About/General/2012/8/9/1344523951483/Japanese-fisherman-unload-008.jpg>

[A picture of humans catching octopus](#)

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