The Species And Ecosystem: Peacock Mantis Shrimp And Its Corresponding Habitat

The species and ecosystem that I chose were the Mantis Shrimp and its corresponding habitat, the Indo-Pacific Coral Reefs. Going into this project, I was already familiar with the existence of the mantis shrimp. I knew some things about it, such as that it was the largest and strongest shrimp. I was also fascinated by the fact that mantis shrimp have 16 cones in their eyes, humans only have three. The idea of an animal being able to see more and different colors than a human is absolutely astounding to me. My father is a marine biologist, so marine animals have always interested me.

Peacock mantis shrimp are a type of crustacean, with a bright-colored body, closely resembling that of a lobster. These aggressive animals live for approximately 4 to 6 years. Female shrimp carry eggs, and aside from that, very little is known about the larval period of a peacock mantis shrimp's life. Breeding usually happens in burrows, so scientists have yet to learn about how exactly this process occurs. Mantis shrimp belong to the Animalia kingdom. In order to be in this kingdom, organisms must be multicellular heterotrophs whose cells have no cell walls. They also belong to the Arthropoda phylum, meaning they have segmented bodies with exoskeletons and they have jointed and paired appendages. Mantis Shrimp have a five-segment head, an eight-segment thorax, and six-segment abdomen. They also have compound eyes on moveable stalks. Because of these features, they are members of the Malacostraca class. Mantis Shrimp also belong to the order Stomatopoda which means that they are marine crustaceans with "gills on [their] abdominal appendages" (Mirr web).

While there is no data currently on the exact population of the Peacock Mantis Shrimp, they are not currently threatened or endangered.

Mantis Shrimp are fascinating and mysterious creatures and the unique abilities that they possess make them an interesting subject for scientists around the world. Many physicists study the way the Mantis Shrimp throw punches in order to understand the mechanics behind their power and how to apply them to modern-day technologies. Biologists also study the eyes of Mantis Shrimp, as they are far more advanced than ours. Some scientists have been studying the brain of Mantis Shrimp as the structure includes mushroom bodies, which no other animal has.

The Indo-Pacific coral reefs are found in a region known as the "Coral Triangle". Located in the Western Pacific Ocean, near the coast of Indonesia, the Philippines, and Papua New Guinea, the Coral Triangle is home to thousands of fish species and nearly 600 different types of coral. LONG LAT. The Indo-Pacific reefs have a tropical climate. As it is a marine ecosystem, the abiotic factor of water plays a huge role in the function of the system.

The carbon cycle is very important to the overall function of the world, including that of the oceans, or more specifically, the coral reefs. The carbon cycle is fairly simple. Carbon dioxide already exists within the Earth's atmosphere. During photosynthesis, it is taken in by different plants, like algae in coral reefs. When this organism is eaten, the carbon is transferred to the consumer, then to the organism that eats the previous consumer, and so on. In a coral reef, this

usually occurs between different planktons and eventually fish and crustaceans. Each organism respires and as they do so, carbon is released into the atmosphere and ocean. When an organism eventually dies, it decomposes and releases most of its carbon, but after many years, it can be burned as fossil fuels, releasing the remainder of the carbon into the atmosphere.

The Indo-Pacific reefs are full of life and color. Being in a region where the climate has not drastically changed in short periods, the reefs of the coral triangle have been growing homes to hundreds of different species, all evolving together as an ecosystem. From coral to whales to sea turtles to mantis shrimp, the Indo-Pacific reefs are home to species of all sorts. Algae and kelp provide a basis for energy in the entire ecosystem. This kelp offers food so that a full system of shrimp, rays, turtles, fish, and sharks can live. Fitting in this series is one specifically incredible animal, the mantis shrimp. Feeding on smaller shrimp, fish, crabs, and jellyfish, this strong organism catches its prey with a deadly punch.

Humans have had a very harsh impact on our entire planet, consequentially affecting the Indo-Pacific coral reefs. Through overfishing, habitat degradation, climate change, and unsustainable tourism, the reefs in the coral triangle are dying. Because of the deaths of this coral, the animals that rely on it are also dying or migrating to different environments that are still thriving. This affects the biodiversity in the area and also causes problems for the many people that rely on the reef. Different organizations, like the World Wide Fund for Nature, have been working to help stop the harm to the reefs in the coral triangle.