DWM Newsletter Winter 2024

Soft Corals: Other Iconic Inhabitants of the Reef

A very cordial greeting to the friends of Dive with Martin. We wish you a prosperous and healthy 2024 and hope to see you soon in Cozumel accompanying us to visit and enjoy our beautiful reefs.

That said, in this first 2024 edition of our quarterly DWM newsletter, we have decided to continue focusing on the intricate and fascinating marine environment that surrounds our island. We are faithful believers that by better understanding our ecosystems, we can care for and preserve them for ourselves and future generations.

In the article that follows, from our great friend, the Marine Biologist "Felix Vazquez", he teach us about Soft Corals. Scientifically known as Octocorales and Gorgonians, these specimens that look like plants but are super sophisticated and delicate animals which beautify our seas for the enjoyment of divers and snorkelers.

DWM remains active in the protection of the marine and land environments in Cozumel. We actively participate in the various programs of the Marine Park for the planting and maintenance of Hard/Stone Corals that is carried together with Colectivo " Corales Vivos Cozumel". DWM has also implemented changes in our operations and processes in order to protect the marine ecosystem that surrounds us.

Our oceans represent more than 70% of the planet's surface, without these healthy bodies of water, life would be practically impossible.

We hope you enjoy Felix's writing and we invite you to join DWM in caring for and protecting our beautiful environment.

By Felix Vazquez, Marine Biologist, Cozumel Quintana Roo.

Octocorals, or commonly called soft corals, belong to the subclass "Octocorallia'' and are related to the famous hard/stony corals (subclass "Hexacorallia"), both classified according to the nomenclature of the World Register of Marine Species. Octocorals are a group of marine invertebrates that includes sea fans, sea whips, sea feathers and blue coral, Heliopora *coerulea*, which is one of a kind. There are approximately 3,000 species and as its name indicates, this group is mainly characterized by having eight tentacles in each polyp and the presence of pinnules (lateral extensions of the tentacles, **Figure 1**), although pinnules have currently been recorded to be absent in several species. With the sole exception of the Indo-Pacific blue coral (*Environmentstranger*), all octocorals have colonial polyps, a feature they similarly share with hard corals/stony reef builders.

Figure 1. *On the left side is a colony of octocoral, possibly of the genusPlexaurella. On the left side the polyps are better seen and you can count the eight tentacles with the "pinnules" on each of them. Photographs taken in Cozumel, 2023.*

Although many people tend to think that octocorals and gorgonians are the same, it is worth mentioning that the latter name is used to identify individuals of the genus, *Gorgonia*, while octocorals are all the other organisms that make up said subclass. If you paid attention to your biology classes, you will remember that living beings are classified into several categories! In **Figure 2,** as an example, the taxonomic classification of the purple sea fan, whose scientific name is *Gorgonia ventalina*. As a curious fact, soft corals are more difficult to identify than hard corals, since they are more diverse and very similar to the naked eye, which is why it is a headache to differentiate them for biologists when monitoring reefs.

Figure 2. *Taxonomic classification of the purple sea fan (Gorgonia ventalina) according to the World Register of Marine Species or WoRMS for its acronym in English (www.marinespecies.org). Photographs of this species can be seen on the next page.*

They are widely distributed in all oceans, but are more common to find in shallow tropical areas with good light and high wave energy. They are another important component in reef communities, since their populations serve as shelter and food for many species of fish and invertebrates (**Figure 3)**. Like hard corals, they feed on small zooplankton and receive important nutrients thanks to their symbiotic relationship with microscopic dinoflagellates (*Symbiodinium*) in their tissues, so unfortunately, they are also susceptible to bleaching under stress conditions. Climate change caused by human activities results in the continuous warming of the oceans, threatening reefs due to thermal stress caused by increasing sea temperatures.

And what can we do to take care of these incredible animals?

When we visit the reefs, we must choose dive shops authorized by the Marine Park to carry out underwater activities within the Protected Natural Areas of Cozumel. Dive shops like ***Dive With Martin®*** implement good environmental practices on their tours, such as avoiding single-use plastics, as well as briefings where they explain the rules of the Marine Park: do not touch the reef organisms, maintain a safe distance from the seabed, as well as avoid using sunscreen and instead use long-sleeved protective clothing such as rashguards. In addition, we must also change our consumption habits for more sustainable alternatives.

Now that you know a little more about octocorals, which group do you like best? Soft corals or hard corals?

Figure 3. Examples of the diversity of octocorals. Some can reach the size of a human (top left) and grow in large concentrations on the seafloor (top right).

A flamingo tongue snail (Cyphoma gibbosum) feeding on the polyps of a blue sea fan (bottom left).

Gorgonia ventalina, or the common sea fan or purple sea fan is the most common species to observe in the Caribbean (bottom right).

Photographs taken in Cozumel (2022-2023) and Sisal, Yucatán (2022) (top-right).

For more information:

1. McFadden, C.S.; Cordeiro, R.; Williams, G.; van Ofwegen, L. (2024). World List of Octocorallia. *Gorgonia ventalina* Linnaeus, 1758. Accessed through: World Register of Marine Species at: https://www.marinespecies.org/aphia.php?p=taxdetails&id=290045 on 2024-01-12
2. McFadden, C. S., Daly, M., Brugler, M. R., Cartwright, P., Collins, A. G., Dawson, M. N., ... & Stake, J. L. (2007). The phylum Cnidaria: a review of phylogenetic patterns and diversity 300 years after Linnaeus. https://doi.org/10.11646/zootaxa.1668.1.11
3. NOAA Ocean Explorer Webmaster. (2022). Deep water Octocorals. Accessed through NOAA at http://oceanexplorer.noaa.gov/explorations/03mountains/background/octocorals/octocorals.html on 2024-01-12
4. Berkeley University. Introduction to Octocorallia. Accessed through https://ucmp.berkeley.edu/cnidaria/octocorallia.html on 2024-01-12