Coral Bleaching PSA

Coral bleaching is a process where corals lose their color due to the loss of symbiotic algae and photosynthetic pigments. Coral bleaching can occur when corals are subjected to various stressors, such as changes in temperature, light, or nutrients. When this happens, coral polyps expel the dinoflagellates, commonly called algae, that live inside their tissue. This causes the coral to turn white, exposing its calcium carbonate skeleton. Most coral coloration comes from the photosynthetic zooxanthellae, which produce reactive oxygen species when water temperatures rise. This toxic reaction leads to the coral expelling the zooxanthellae. While most bleached corals appear bright white, some may show blue, yellow, or pink hues due to pigment proteins in the coral.

The primary reason for coral bleaching is the increase in ocean temperatures caused by human activities contributing to climate change. Even a slight above-average temperature rise of 1 °C (or 2 °F) can cause coral bleaching. As the ocean absorbs a significant amount of carbon dioxide (CO_2) emissions from human activities, it helps regulate global warming and leads to unprecedented changes in ocean chemistry. This phenomenon, known as ocean acidification (OA), is the reduction in seawater pH caused by the absorption of anthropogenic carbon dioxide from the atmosphere. The decline in seawater pH has a significant impact on marine ecosystems.

Climate Change = Changing Ocean Temp = Coral Bleaching

In April 2024 a 4th global coral bleaching event was confirmed by NOAA.

This event has led to severe damage, with coral mortalities reaching up to 93% in areas like the Pacific coast near Mexico. The economic implications are profound, as coral reefs contribute approximately $2.7 trillion annually to the global economy, including $36 billion from tourism alone.

Moreover, **the Great Barrier Reef is undergoing its fifth extensive bleaching event since 2016,** underscoring the persistent and serious risks these vital ecosystems face.