

Homework 1

Coral Bleaching

What is coral bleaching?

Coral bleaching happens when corals lose their vibrant colours and turn white. But there's a lot more to it than that. Corals are bright and colourful because of microscopic algae called zooxanthellae. The zooxanthellae live within the coral in a mutually beneficial relationship, each helping the other survive. But when the ocean environment changes—if it gets too hot, for instance—the coral stresses out and expels the algae. As the algae leaves, the coral fades until it looks like it's been bleached. If the temperature stays high, the coral won't let the algae back, and the coral will die.

What triggers coral bleaching?

The leading cause of coral bleaching is climate change. A warming planet means a warming ocean, and a change in water temperature—as little as 2 degrees Fahrenheit—can cause coral to drive out algae. Coral may bleach for other reasons, like extremely low tides, pollution, or too much sunlight.

Why does coral bleaching matter?

Coral bleaching matters because once these corals die, reefs rarely come back. With few corals surviving, they struggle to reproduce, and entire reef ecosystems, on which people and wildlife depend, deteriorate.



According to the [National Oceanic and Atmospheric Association](#), between 2014 and 2017 around 75% of the world's tropical coral reefs experienced heat-stress severe enough to trigger bleaching. For 30% of the world's reefs, that heat-stress was enough to kill coral.

The Impact of Coral Bleaching

How does coral bleaching impact wildlife?

Coral reefs support some of the most biodiverse ecosystems on the planet. Thousands of marine animals depend on coral reefs for survival, including some species of sea turtles, fish, crabs, shrimp, jellyfish, sea birds, starfish, and more.

Coral reefs provide shelter, spawning grounds, and protection from predators. They also support organisms at the base of ocean food chains. As reef ecosystems collapse, already at-risk species may face extinction.

How does coral bleaching impact humans?

Coral bleaching impacts peoples' livelihoods, food security, and safety. Coral reefs are natural barriers that absorb the force of waves and storm surges, keeping coastal communities safe. Without them, we must rely on manmade seawalls that are expensive, less effective, and environmentally damaging to construct.

Bleached coral also compounds the overfishing crisis by removing links in the food web and depriving some fish and crustacean species of a place to spawn and develop. Anyone relying on these animals as a primary source of income or protein will be in trouble.

Finally, reef tourism brings in billions of dollars each year and supports thousands of jobs. Bleached coral reefs, devoid of magnificent marine species, jeopardize it all.

Protecting the Coral Reef

We are not doomed to lose all corals to bleaching, but we need to act now if we want to protect coral for future generations. Small, daily actions can help reduce coral reef loss, like reducing stormwater and fertilizer runoff or avoiding herbicides and pesticides.

If we really want to solve the coral bleaching problem, we must address climate change. That means global, comprehensive, and immediate action to

reduce emissions – something that WWF is determined to accomplish. We're working to stop deforestation; help businesses, consumers, and cities transition to renewable energy; and guide governments toward climate-smart policies. Together we can act now to save the world's coral reefs from bleaching before it's too late.

<https://www.worldwildlife.org/pages/everything-you-need-to-know-about-coral-bleaching-and-how-we-can-stop-it>