

THREATS TO THE WORLD'S CORAL REEFS



Coral reefs around the globe are in danger of being lost due to human-induced stresses. Read on to learn about some human activities that are hurting coral reefs and what you can do to help.



OVER-FISHING

Inadequate fisheries management can affect a reef's ecological balance. For example, drastically decreasing the number of herbivorous fish can cause algae to grow out of control and smother coral. Over-fishing of key reef species can cause permanent declines in fish stock which can even make it near impossible for a population to come back. You can help by choosing seafood that comes from well-managed and sustainable fisheries (visit <http://www.montereybayaquarium.org/cr/seafoodwatch.aspx>) and encouraging local establishments to offer these types of seafood.



DESTRUCTIVE FISHING

Destructive fishing methods, like the use of dynamite and cyanide, physically damage fragile coral that reef animals depend on and harm fish species other than those targeted by a fishery. These methods stun all fish in an area, often killing those near by. Fishermen say they have no other option when they must compete against commercial trawlers for a small supply of fish (as a result of over-fishing). Again, you can help by choosing seafood that comes from sustainable fisheries.



AQUARIUM TRADE

The majority of tropical marine aquaria house animals caught in the wild. This growing trade can involve the use of cyanide to collect fish, high mortality from shipping and poor handling, and over-harvesting of target animals. You can help by making smart decisions about the source of the animals in your tropical aquariums and encouraging higher industry standards.



UNSUSTAINABLE TOURISM

Tourism can be critical for host countries, but when tourists are careless or uneducated about an area, they can break fragile coral. Be an informed tourist. Learn about the areas you visit and use caution when diving, snorkeling and boating near coral.

COASTAL DEVELOPMENT

Coastal land is often filled to create land for airports and other construction projects, or dredged to create marinas or areas to dump waste. Development near streams can increase the amount of sediment, freshwater, and nutrients from the land flowing into the ocean. Corals are adapted to clear water with little nutrients, but run-off can increase sedimentation (dirt) that smothers corals, or promote algal blooms which use up oxygen and block sunlight. Land runoff can disrupt the balance of coral reef communities.



CLIMATE CHANGE

Coral bleaching occurs, usually due to increased ocean temperatures, with the loss of symbiotic algae which live in the tissue of coral. These symbiotic zooxanthellae perform photosynthesis, and thus provide coral with energy they rely on to survive. Bleached corals appear white, or "bleached." Mass bleaching occurs when ocean temperatures exceed 1°C above normal for four weeks or more months. Temperatures that exceed 2°C increase the chances of coral mortality following bleaching.



CO₂ in the atmosphere has been increasing since humans began burning fossil fuels. Atmospheric CO₂ is absorbed by plants on land, which have changed in this time as well, and by the ocean. As atmospheric CO₂ increases, it is dissolved into the ocean. Chemical reactions between the water and CO₂ cause the pH of the ocean to decrease, and in other words, become more acidic. This chemical reaction also makes it harder for organisms, like corals, urchins, snails, and some phytoplankton at the base of the food web, to build their skeletons and shells.

You can help by working to reduce your carbon footprint. Carpool, drive more fuel efficient vehicles, and work to make your home more energy efficient.



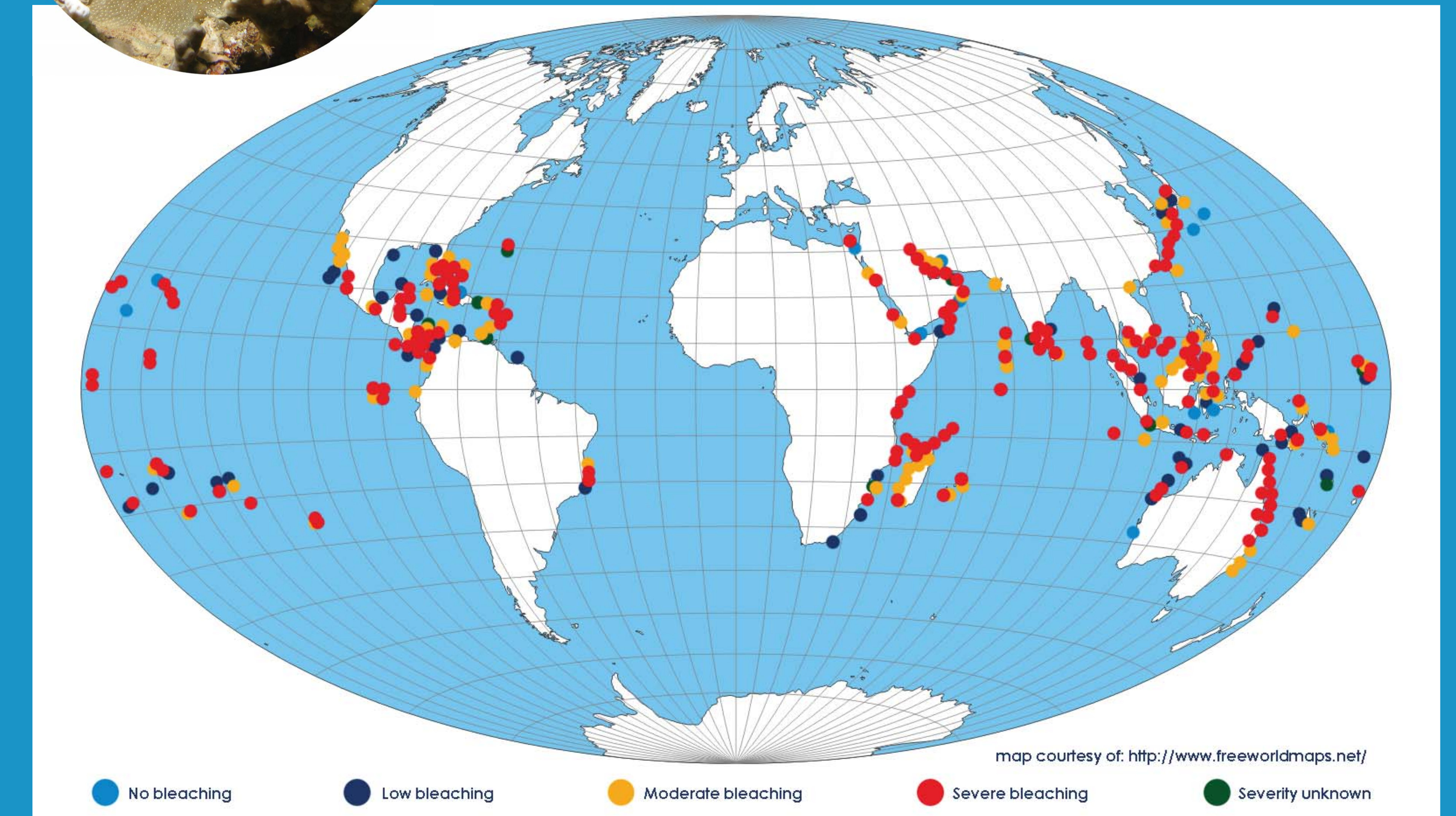
“The world has effectively lost 19% of the original area of coral reefs; 15% are seriously threatened with loss within the next 10-20 years; and 20% are under the threat of loss in 20-40 years.

46% of the world's reefs are regarded as being relatively healthy and not under any immediate threat of destruction, except for the 'currently unpredictable' global climate threat.”



DISTRIBUTION AND STATUS OF CORAL REEFS

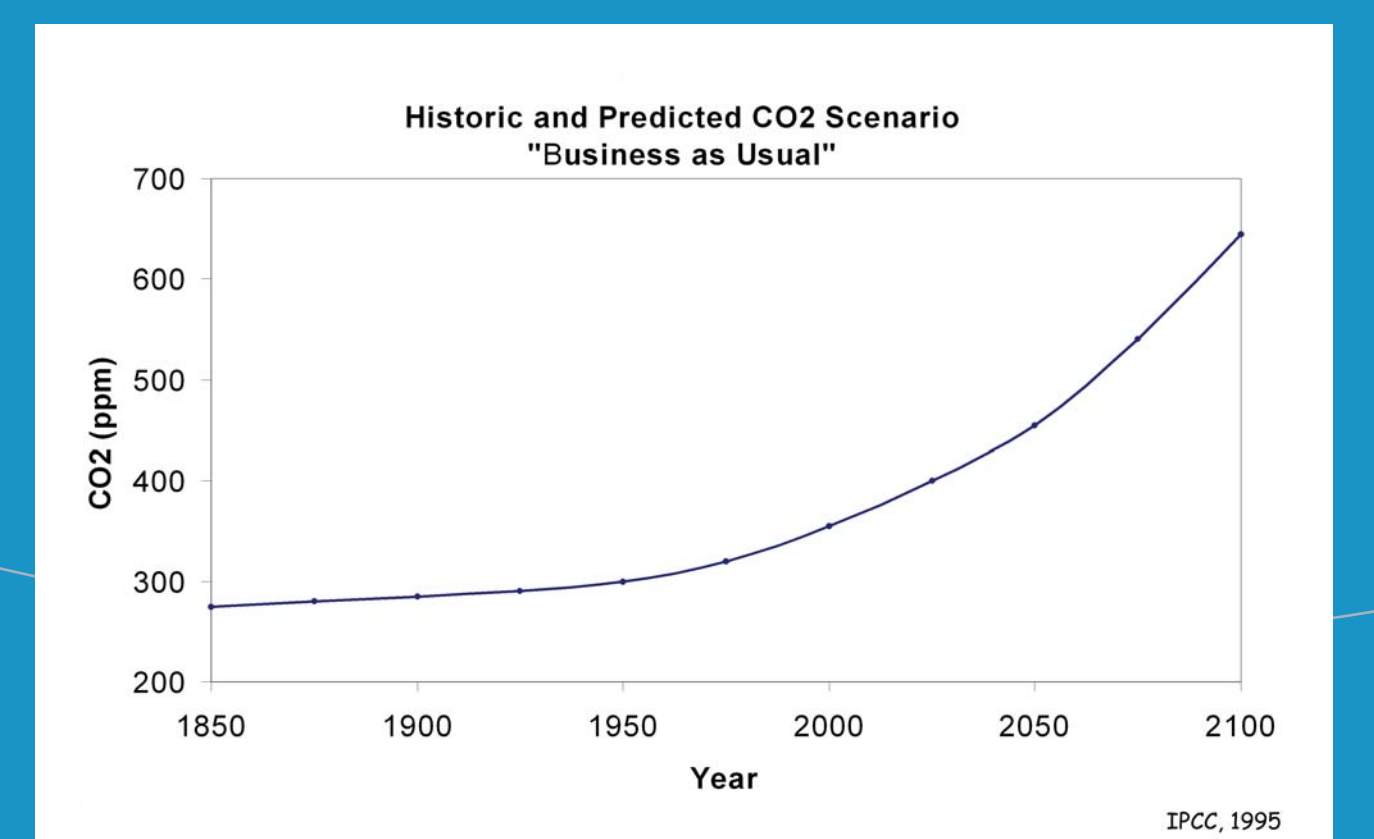
This map illustrates the status of coral reefs around the globe, as measured by the amount of bleaching occurring there. Corals lose their color or "bleach" when their symbiotic algae leave, usually due to temperatures too high for the algae to survive. Corals rely on the algae for energy, and can die without them.



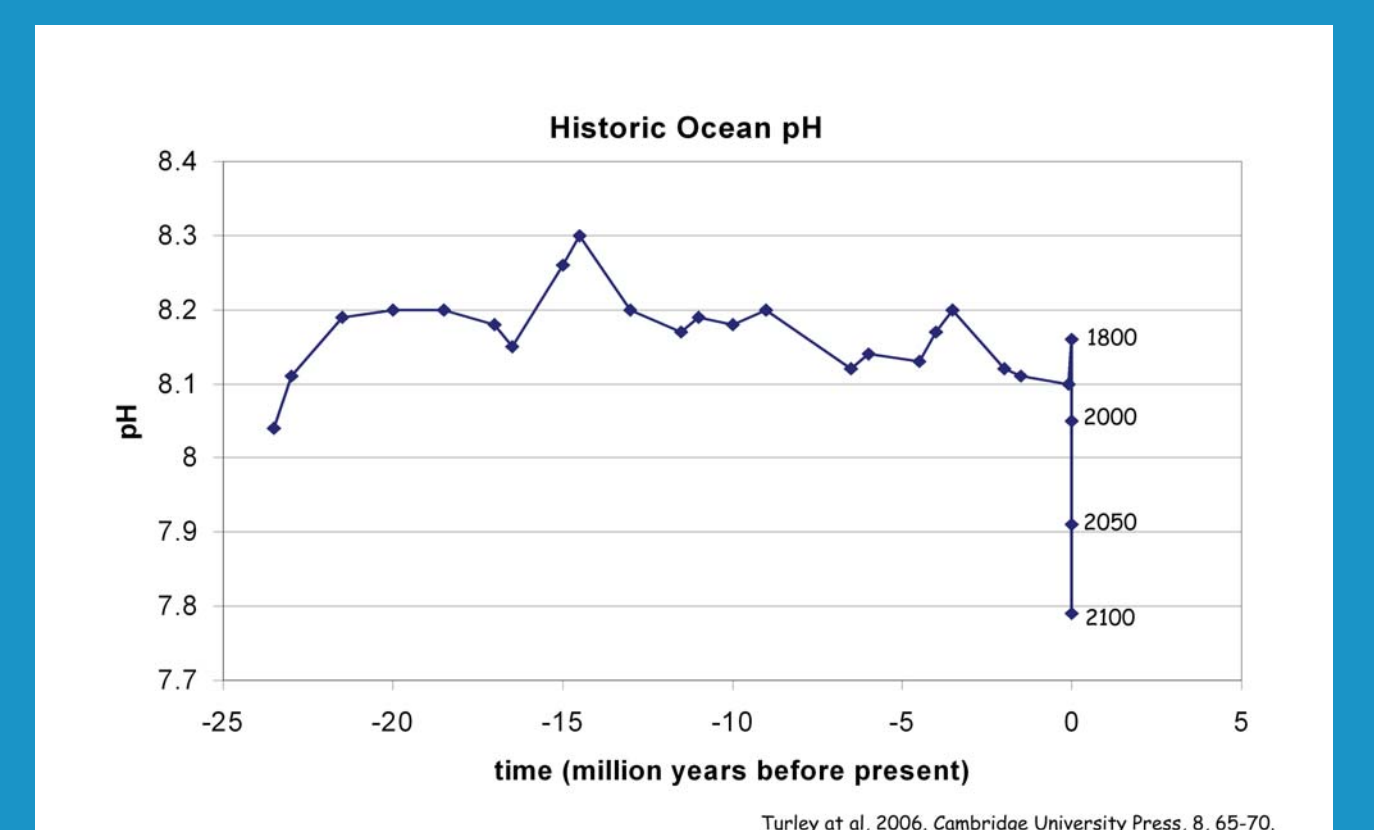
“Approximately half of the coral reef ecosystem resources under U.S. or Pacific Freely Associated States jurisdiction are considered to be in 'poor' or 'fair' condition.

Coral reef declines will have alarming consequences for approximately 500 million people who depend on coral reefs for food, coastal protection, building materials and income from tourism.

Reef habitats adjacent to populated areas tend to experience more intense threat levels related to issues like coastal development and recreational use, but even remote reefs far from human settlements are imperiled by illegal fishing, marine debris, and climate-related impacts such as bleaching, disease and acidification.”



This graph depicts how CO₂ in the atmosphere has been increasing since humans began burning fossil fuels. Atmospheric CO₂ is absorbed by plants on land, which have changed in this time as well, and by the ocean.



This graph demonstrates how the pH of the ocean is the lowest it has ever been. As atmospheric CO₂ increases it is dissolved into the ocean. Chemical reactions between the water and CO₂ cause the pH of the ocean to decrease and other words, become more acidic. This chemical reaction also makes it harder for organisms, like corals, urchins, snails, and some phytoplankton at the base of the food web to build their skeletons and shells.

STATUS OF THE WORLD'S CORAL REEFS

