A CONCISE GUIDE TO Monoculture and Ocean Dead Zones

What are Ocean Dead Zones?
Dead Zone: an area in the ocean that has either become toxic or completely lacking in oxygen, in which nothing can live there.

There are currently believed to be more than 450 dead zones in the ocean, varying in size, with some as large as the Texas. These areas cannot sustain life and may in fact kill anything that swims into them. Having previously been caused by natural processes, since the 1970s reports have shown that we as humans are by far the main reason for the spread of dead zones across the oceans. Whilst these occurrences can be reversed, the damage they cause to marine ecosystems is often irreparable, and so we must take great care to prevent such break-outs. As our knowledge of these impacts increase, we now better understanding how they can be avoided, to better protect our oceans.

Cause of Dead Zones

Most dead zones can be found at the mouth of rivers, where the river enters the ocean. The reason for this is that large-scale farming operations called Monoculture (growing only one plant type such as wheat) are releasing many chemical pollutants such as excess fertilizers into water ways, which carries these pollutants down to the sea. Pesticides and sewage also enter the rivers, with the result that small organisms called algae are fed and grow rapidly to form blooms. Algae uses large amounts of oxygen in the water and when their volume becomes unsustainable they die off in large amounts. As they decay, they use up the last remaining oxygen, making the area oxygen starved- a condition known as 'hypoxia.' Without any oxygen in the water, other lifeforms die off in a form of ecosystem collapse that leaves the area completely barren.

Effects of Dead Zones

The ocean contains vast amounts of a plant life called phytoplankton. These plants float near the surface of the water and photosynthesise using sunlight and carbon dioxide to make energy, releasing oxygen as a by-product. Scientists estimate that 50-85% of earth's oxygen comes from phytoplankton. For this reason, it is vital that we protect our oceans. With growing dead zones, we put the planet and ourselves at risk. Of course, marine areas are also important to local economies, and if a dead zone occurs near a coastal settlement then fishermen and their families suffer. These are not the people who caused the event, but even so they suffer the consequences. Already, 90% of big ocean fish populations have been lost since 1950, so occurrences such as these can tip both human and animal communities over the edge.

Solutions to Dead Zones

Firstly, we must enforce current legislation with regards to the dumping of chemicals and other waste into rivers. We need to encourage and promote smart agricultural practice to reduce run-off and the amount of chemicals used. Coastal developments should be limited, to conserve the natural shorelines which are fish nurseries and water filters. Sewage processing plants must be improved, so that nothing which does not naturally occur in the sea is released into it. We must redesign industrial processes to form a circular economy where waste products are recycled and reused. Most importantly, we should change our habits to have the minimum impact on environments through our actions.

Yvette Taylor
Director - Lawrence Anthony Earth Organization
Tel/Fax: 27877009657
www.earthorganization.org