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Coral Reefs: Destroying Ancient Beauty, an Ethical Problem Coral reefs are some of the world's liveliest, diverse, and most remarkable ecosystems on the planet. From the most well known Great Barrier reef, to other reefs that occupy seashores, coral reefs remain one of the world's natural habitats that rival the rainforests in their longevity and life. Something that has seemingly been taken advantage of by tourists and nature lovers alike, the coral reefs may be disappearing faster than the rainforests (Scales). According to the Great Barrier Reef Outlook Report 2009 put out by the Australian Govt., every major aspect of the Great Barrier Reef, from chemical makeup, ecosystem health, fish and organism population has dropped significantly in the last 10 years and sees no hopes of rising within the near future. Other coral reefs across the world are suffering the same fates, and to some experts, the reefs will be gone by mid-century (Adam). And if the coral reefs go, they take one-third of the ocean's biodiversity with it (Adam). Is there any hope? This paper will investigate what the reefs are and the purpose they serve, the science behind the deterioration of the reefs, possible solutions (including pros and cons); and how one's Christian ethical worldview should stand on such an issue. Can the Christian stand for such things? How does one understand, cope, and deal with this ethical conundrum? First what are corals and coral reefs. Corals are not plants, but are animals closely related to sea anemones and jellyfish. They have tiny tentacles with which they can sting and consume fish and small animals. They are found throughout the world's oceans such as the Indian and Pacific oceans. Some corals can exist in the ocean without even being seen by the naked eye. When corals come together and form large communities, is when

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they are best known and can be viewed most effectively. In places like the Caribbean, Indian and Pacific Oceans, the corals form with tiny algae. The algae play a vital role, as they photosynthesize, and create food for the coral. The coral in return provide the algae with the carbon dioxide they need for the photosynthesis to occur. The corals secrete the mineral calcium carbonate, and it's from this where they form their exoskeleton. Another type of algae, which produces calcium carbonate, forms a kind of concrete for the exoskeleton. The process is quite unique, with dead corals leaving their calcium skeleton behind as limestone. However, this crust is not indestructible, and suffers attacks from fish that brush by their algae. Animals use their large expansive communities as homes, and waves constantly break them apart. Coral reefs serve as home and habitat to thousand of organisms and fish species. As mentioned before, should the coral reefs disappear, they would take one-third of the Ocean's biodiversity with it. However, the coral has remained in a consistent balance of destruction and rebuilding for millions of years whilst still serving as a proper home. Until humans came along and changed things to a point of irreversibility. " Estimates in this report are that 20% of the world's coral reefs have been effectively destroyed and show no immediate prospects of recovery", according to the Status of Coral Reefs of the World 2004: Report. According to that same report, 24% of the world's reefs are under immediate risk of destruction through direct human influence, and another 26% are under a longer term watch, but just as dangerous risk of collapse. Among these human influences, the report states poor land management practices that are releasing more sediment, nutrients and other pollutants into the water that harm the reefs. 20-30 years ago, the world's reefs were a much

more sustainable, healthy ecosystem of life. But industry and economy have caused reef stress, and while the resort and vacation industry thrive around the reefs, the coral may not survive long enough. Only 40% of the 16% of the reefs that were seriously damaged in 1998 alone have recovered fully or are recovering. Among poor land management practices, other reasons for reef deconstruction persists. For Australia, the most detrimental cause for the Great Barrier Reef is the ocean acidification. Chemical changes have decreased pH by 0.1 units. Where the current pH is 8.2 alkaline, it's predicted by scientists that the pH could be fall to 7.8 (still slightly alkaline) by 2100 (Great Barrier Reef Outlook Report 2009). With the persistent acidification, the areas of suitability in the ocean for the building of shells and skeletons will eventually completely disappear (Great Barrier Reef Outlook Report 2009). Human coastal development, driven chiefly by mining, general industry and steady population growth, is significantly changing the reef; and in the past 150 years, the areas most farmed has quadrupled and industry has driven population growth at rates faster than the Australian average (Great Barrier Reef Outlook Report 2009). Global Warming has caused sea levels to rise and temperatures that have remained stable to rise to unexpected ranges. All this has produced great stress on the reefs, and certain organisms are in danger of disappearing altogether before the reefs even go as a whole. Some coral species are already considered functionally extinct, and numerous fish species have been classified extinct or considered functionally extinct according to the report. Reef habitats are eroding at dangerous levels, and organisms such as plankton and microbes suffer from rising sea levels, acidification, as well as compositional shifts due to rises in sediment (Great Barrier Reef Outlook Report 2009). Polluted rivers lead to

the sea and sediment and sewage cloud the waters. Over fishing is a constant problem where the reefs exist causing immense problems for the balanced population levels of fish and sharks (Adam). According to Charlie Veron, an Australian marine biologist who is widely regarded as the foremost expert on coral reefs, " the future is horrific. There is no hope of reefs surviving even to mid-century in any form that we now recognize". Veron even goes as far as to say, " as reefs fail so will other ecosystems. This is the path of a mass extinction event, when most life, especially tropical marine life, goes extinct" (Adam). Is there hope? Are there solutions? Can this ethical problem be solved? It seems scientists have not given up yet. Off the coast of Japan, scientists are farming healthy coral on hundreds of ceramic discs, which in turn they hope to transplant into the badly damaged Sekisei Lagoon reef within two years. In 30 years, they hope the reef will have a chance to recover fully. In the Philippines, along the coastal community of Bolinao, natives have broken off healthy chunks of coral and wedged them into bleached, dying sections. Other scientists have cultured corals in swimming pools, and researchers in the Maldives are using large sunken cages connected to low level electrical current to help coral form from their chalky shells (Adam). Other experts such as Professor Kent Carpenter of Old Dominion University in Virginia, believe methods to saving the coral rely on preserving reefs in marine reserves, reducing greenhouse gas emissions, restricting fishing until certain species can be allowed to recover, and significantly reducing oceanic pollution (McFadden). Preserving marine reserves will hopefully allow transplant of healthy coral to occur from the reserves to sick and dying patches all around the world. Reducing greenhouse gas emissions will of course require much more of a global

effort, but it is a subject on the minds of world leaders for other reasons as well. Reducing fishing will be one of the harder to accomplish, as the demand from the market from certain fish species, especially the quantity, is in high demand right now. However through Government involvement and legislation such an effort will be possible. The same is true for the reducing of oceanic pollution. The task is a difficult one but with proper Government handling and involvement, pollution could see a significant decrease in the next 20 years. Some Organizations however are stepping in. The World Bank has partnered with over 60 coral reef experts and as part of the Coral Reef Initiative are funding \$21 million dollars to be used for coral research and rebuilding. The World Bank chose to Israeli Professors Yosi Loya and Eugene Rosenberg of Tel Aviv University to head up the Initiative. Loya and Rosenberg head up just one section of 5 total designed by the World Bank in an effort to gather research on corals from all fronts. The scientists gather around the world and devise systems with their teams for science and Governments at the practical level to carry out (Kloosterman). According to Loya, the necessary steps to fix the corals are doable, however need to be enacted quickly. " Reefs can be restocked, the local pollution can be cleaned up, but the only long-lasting solution to saving the corals is to stop global warming through political action in all the world's governments" (Kloosterman). However, the battle is constant. Both Loya and Rosenberg are trying to get Israeli fish farms to stop contaminating the water. In labs Loya is using contemporary and fossil corals to build predictive models concerned with the global climate change. To a lot of scientists and ethical critics, what's being enacted to save the reefs is not really working, and certainly not working fast enough. While setting aside reserves and nurseries of coral

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reefs, it takes time for them to grow, and then they have to be transported and grafted back into the dying, bleached coral. While this is effective to an extent, reserves can't grow new coral fast enough to combat the amount that is damaged and dying. Conversely, reducing pollution in the ocean means passing regulations on big businesses, which takes time and legislation. If those regulations are passed however, getting the pollution out of the water is not enough in the long run. If the pollution itself is not dealt with but only redirected, then another world ecosystem may begin to suffer, and in 100 years that ecosystem will suffer the same as the corals do now. Where many of the reefs are located, the fishing business is a huge source of the economy. Getting companies and corporations to stop fishing some species altogether in order to allow them to recover will have a major and adverse effect on the economy. Not only will jobs possibly be lost in the native coastal areas, but global markets can drop and prices rise due to lack of production therefore causing further problems elsewhere as well. Reducing greenhouse gas emissions is making advances in the scientific field, but does not have as much of an initiative as it may like, nor as much political backing with politicians economists more concerned about the current economic downturn. Global warming may be on the agenda of politicians for the future, but will take time before major changes are seen, and global warming seems to hold the biggest problems for coral reefs. From a scientific and global perspective, to a more faith based perspective, what is a Christian's ethical worldview supposed to be when concerning the coral reefs? The Psalms refer to God's beauty in creation, and that is evident in the coral reefs, referred to as "the rainforests of the ocean" (Scales). Christians are called to be stewards of the earth, but is that a good enough reason to

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spend millions on underwater corals that to many is simply eye candy to observe while on vacation? The answer is in the philosophical and ethical worldview a Christian should have. God created the earth, and he saw that it was good. God gave the earth to man to rule over and facilitate as well as use for resources. However, through the marring of sin, the gift that was once a good one from God humans have broken and deteriorated. How we treat each other and what we have been given is a reflection of our relationship with God. Christians ethically cannot expect to be a force of change, love and grace in the world if the very planet we stand on is neglected. What kind of a message will this send to the population that knows no Christ? What moral message are we sending? If we adhere to the message of Jesus and the cross, it's that Christ has and will restore all things to the way it once was. He can do this with people's lives, removing the stains of sin to bring about his glory and a life that can live redeemed. He will also restore all of creation to the original "good" way it once was. However, Christians cannot pretend to be proponent of the first message of the cross without being a proponent of the second as well. Christians ethically or morally cannot claim a message to be important for human life if it they do not then apply that message to creation. Christians cannot claim responsibility in only human issues and lives but ignore the earth's issues and health. Such shows favoritism and disrespect for the commands of God as well as hypocrisy in the eyes of the world. Because Christians see the world as God's, we need to treat it as such. IF we can learn do so, then we will begin to understand the very meaning of our ethical responsibility to the world, our fellow man, and the creation that God has bestowed to us to reside over and take care of. Coral reefs are in trouble. The global scientific

community is beginning to wave the red flag, and change is occurring, but it may be too little too late. Reefs are bleached, sickly, and dying. In need of constant help and attention, time will only tell if what is being done now is enough. From what coral reefs are and what purpose they serve, to the science behind what goes on in the damaging of the reefs, to what is being done and the effectiveness of the solutions. Coral reefs are an ancient beauty of the world, holding nearly one-third of God's creative biodiversity. All that can be done to save them should be, and time cannot be wasted.

Works Cited Scales, Helen. "Coral Reefs vanishing faster than rainforests". August 7th, 2007. <http://news.nationalgeographic.com/news/2007/08/070807-coral-loss.html>

Adam, David. "How Global Warming sealed the fate of the world's coral reefs". September 2, 2009. <http://www.guardian.co.uk/environment/2009/sep/02/coral-catastrophic-future>

Mcfadden, Patricia. "Coral Reefs Dying, Experts say Recovery Possible". July 14, 2008. <http://www.informify.com/top-stories/46-natural-world/304-coral-reefs-dying-experts-say-recovery-possible>

Kloosterman, Karah. "An Israeli Effort to Save the Coral Reef". July 9th, 2006. http://www.israel21c.org/index.php?option=com_content&view=article&id=1415%3AAAn+Israeli+effort+to+save+the+coral+reef&Itemid=140

<http://www.globalissues.org/article/173/coral-reefs>

Wilkinson, Clive. Executive Summary: Status of Coral Reefs of the world 2004: Report. World Wildlife Fund, 2004. Australian Government. Barrier Reef Outlook Report 2009: In Brief. Great Barrier Reef Marine Authority. National Library of Australia, 2009.