

# Environmental effects of tourism on thai coral reefs



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The tourism industry has grown exponentially over the previous twenty years, it is now a worldwide industry, both in terms of tourists and host destinations, and 'is no longer confined to the developed countries that traditionally provided the demand for world travel' (Page & Connell, 2006, pp. 4). World leaders have long been recognising the huge economic advantages that a booming tourism industry can bring to their nations, and vast amounts of money have been invested set up the infrastructure to support such an industry.

However, aside from the large economic advantages to the industry, there are inevitably negative impacts to the host nation and the world as a whole. These negative impacts usually materialise in the form of environmental or socio-cultural issues; and in many cases, these have all but been pushed aside, with economic advantages prevailing over all else. Only recently has the world started to become aware that if they do not protect their precious touristic resources; the invaluable industry will soon die out.

The following essay will look in depth at the declining state of Thailand's coral reefs in relation to its continually growing tourism industry, and discuss the reasons for this negative environmental effect. It will then go on to explore the methods of sustainable tourism employed by other nations who are suffering the same problems, and judge to what extent, and with how much success, these methods could be integrated into the Thai system. Tourism is having a major negative environmental impact on coral reefs and the marine life that habituate around them all over the world, and Thailand is no exception.

Tourism affects coral reefs in both a direct and indirect manner. The most obvious sign of coral death is when it loses all its vibrant colours and turns a milky white colour; this is known as bleaching. There are algae that live in the coral that give it its colour, bleaching occurs when these algae either leave or die, leaving the coral transparent and exposing the white shell underneath (Ocean World, 2004). The primary indirect source of reef damage is increased CO<sub>2</sub> emissions and global warming, which has been steadily increasing the temperature and acidity of the world's oceans for many years now.

It is this increased acidification and sea temperature that has had such a substantial diminishing affect on the coral reefs, as corals have evolved to survive within a fairly specific environment (Adam, 2009); even increases of one degree in temperature can have a serious impact. Obviously it would be massively inappropriate to apportion all of the blame for global warming with the tourism industry; however, with all the travel and energy consumption related to tourism, it has to be held accountable for the impact global warming has on the coral reefs.

Thailand's east coast, on the western side of the Gulf of Thailand, is notably susceptible to typhoons. Typhoon Gay hit this area in 1989 causing widespread damage to the coral reefs. While scientists have never been able to find any evidence that the increasing number of typhoons is related to global warming, some of them strongly believe that there has to be a correlation between the rising sea temperatures and the increased intensity and duration of typhoons (Roach, 2005). This can only be translated as a greater threat to the coral reefs off Thailand's east coast.

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The worst hit coral reefs around Thailand are in the areas where a major coastal development has occurred. This is most apparent around the island of Phuket. In the early eighties tourism in Phuket really took off; to support this huge boom in tourism, there has been wide spread development and the building of resorts. When the tsunami hit Thailand in 2004 much of this was destroyed, and has since had to be re-built. If construction work in coastal areas is badly managed it can lead to the poor removal of waste, which ultimately ends up with large amounts of sedimentation and other toxic substances being dumped in the sea.

This has not been uncommon all over Thailand, but in Phuket it has been particularly bad. It is widely believed that this continuing construction work around the coastal areas is the biggest problem in terms of coral destruction; Nipon Pongsuwan of the Phuket Marine Biological Centre backs this argument up by saying ‘ sludge and debris washed into the sea from building work across the island was the main factor responsible for the reef destruction’ (cited in CDDN, 2004).

The sludge and sediment deposited in the water contributes the ruin of the reef by blocking out the sun’s rays to the bottom of the sea, and preventing the algae from photosynthesising which in turn leads to the bleaching of the coral. Thailand’s coastline, in particular around the low lying river estuaries, is primarily made up of mangrove forests. Over the previous year’s Thailand has seen a major decrease in its mangrove land. This can be attributed to several things; tourism being one of them (Poonnachit-Korsieporn, 2000).

Where coastal land is in high demand, many of the mangrove trees are ripped out to create the space for building hotels and tourist complexes. Mangrove forests are a major world ecosystem in themselves that provide a home to many species of animal; such as shrimp and different varieties of ape, so obviously the declining mangrove forests alone are a negative environmental impact of tourism. However, this deforestation also creates issues for the coral reefs. Mangroves act as natural barrier to the sea; they prevent the erosion of the coast and stop sedimentation washing down the rivers and out into the sea (W.

W. F. , n. d. ). When the forests disappear, the amount of silt and earth washed out to sea massively increases, having the same effect as the waste construction materials discussed above. The major direct impact from tourism on the coral reefs is by the actual tourists themselves. Naturally, around coastal areas that house a coral reef, one of the biggest draws for tourists is the diving and sea fishing that is on offer. The sheer number of tourists that take part in these activities is having a huge effect on the coral.

Around all of the coastal areas there many companies who offer everything from snorkelling day trips to fully blown dive courses; for people of all abilities. Coral is easily damaged by inexperienced, overzealous divers; who grab and kick the coral when trying to take a picture or souvenir. For those tourists who do not help themselves to a souvenir, there are always locals who gather the coral and sell it to make a quick buck. Over fishing of the marine life that uses the reefs as their home has obviously had an impact on the variety, quality and quantity that can be seen.

As in most ecosystems all things are reliable on one another, and the depletion of reef fish has had a major affect on the coral. In addition to the algae that give coral its colour, there are other damaging algae that attach themselves to outer surface of the coral. Reef fish feed off these algae and keep the coral clean; with fewer fish, algae builds up and suffocates the coral, which in turn leads to bleaching. As the numbers of people diving and fishing increases around the coasts of Thailand, in variably the number of boats also increases.

Boats cause damage to the reefs in several ways; in similar fashion to the sludge depositaries discussed above, oil slicks from the engines suffocate and kill corals. Anchors dropped without consideration, smash in to the coral causing irreparable damage. As do propellers in shallower waters. This has in some instances lead to boats running aground on the coral, also causing physical destruction. To counter the problem some islands have taken to using dynamite to blast gaps in the reef to allow the safe through fare of boats. Coral accounts for a mere 0. 5% of the world's sea floor, and yet it's believed that around a quarter of all marine life use coral reefs as their home (W. W. F. , n. d. ). The huge environmental effect from the destruction of coral reefs in Thailand is easy to see. However, perhaps the major danger that could arise from the environmental issues in Thailand is the economic repercussions. According to Hector Sim from economywatch, ' tourism makes up 6. 7% of Thailand's economy, and 7% of its workforce' (n. d. ). The coral reefs that surround Thailand are part of what makes the country so beautiful.

They are one of the nation's major attractions that pull in tourist of all types, from all walks of life. If the reefs are destroyed that would drive away the people who come to dive and fish, and in turn dramatically decrease Thailand's income. Although the nation would suffer as a whole, the likelihood is that the worst hit would be the locals of the coastal resorts, as Ahmed et al. point out ' people dependant on coral reefs are some of the most vulnerable groups in many coastal and island communities, because reef and reef based resources are often their primary means of food production, source of income and livelihood' (Ahmed et al. 2005, pp. 2). Thailand has also emerged as one of the world's leading suppliers of seafood products; if the destruction of the coral reefs continues this invaluable industry is sure to decline along with it.

The coral reefs around Thailand are not the only reefs under threat; in fact, it is a worldwide issue. However, as the problem has become more and more recognised many countries have started to develop methods of sustainable tourism in order to protect and secure this extremely valuable touristic and economic resource. Cooper et al. offer the idea that sustainable tourism ' requires appropriate consideration of the long term economic, environmental, socio-cultural and political well-being of all stakeholders' (2008, pp. 218), they go on to suggest this can only be achieved through engagement with all stakeholders involved in the process; from production to consumption. More specifically, when applied to the problem at hand, this suggests that Thailand must strive to find the correct balance between the economic advantages and the environmental and socio-cultural disadvantages surrounding the coral reefs.

Although the Thai government has started to implement certain processes to this nature; they could learn from, and adapt certain ideas of other nations to solve their own issues. The first area that needs to be looked at is that of CO2 emissions and global warming. Obviously, this is not just an issue which relates to tourism and more specifically Thailand alone, but tourism does contribute at least 5% of global emissions and the Thai tourism industry must play its part in reducing this, especially with its invested interest in its coral reefs (U. N. E. P. n. d. ). One approach it could take is that used in Australia, where group Climate Action Australia have set up the Climate Action Certification Program. This was done in collaboration with the Great Barrier Reef Marine Park Authority (GBRMPA) who have encountered similar problems of coral bleaching in their reef (EcoTourism Australia, 2008). The certification aims to provide all forms of touristic businesses, like hotels, tour operators and travel agents, with accreditation when they have successfully managed to audit and control their carbon footprint.

This gives tourists an idea of how environmentally friendly certain businesses are, and lets them make their own informed decisions on who they should chose. The obvious downside to this form of system is that it is ultimately still in the hands of the tourist to decide how environmentally conscious they wish to be. This arrangement could be set up in Thailand relatively easily; and it would probably work to some extent in the more established hotel chains that attract families and those tourists with a higher disposable income.

However, a large part of Thailand's tourism industry consists of small family run hostels and restaurants for backpackers; it could be the case that these <https://assignbuster.com/environmental-effects-of-tourism-on-thai-coral-reefs/>



establishments would not be interested in the costly process of 'going green'. The Coral Reef Alliance (CORAL) is a non-profit organisation that works in specific areas to protect coral reefs. CORAL do not currently work in Thailand, but they do have plans to set up new project sites in the south of the country in the coming years. The basis of CORAL's work promotes conservation through their 'Coral Reef Sustainable Destination' model.

They consider this a holistic approach that incorporates, and primarily educates members of the local community, marine tourism operators and managers of marine protected areas (Coral Reef Alliance, 2010). In countries such as Belize, Indonesia and Fiji CORAL have set up projects that educate tour operators on the negative effects of tourism and teach them ways to improve their environmental performance. In Belize they have taken this one step further and set up a project that aims to teach children about the importance of conserving the reefs.

I believe that this could work extremely well in certain areas of Thailand; from my own experiences of visiting the country I realise that many touristic businesses are family run, and when children are not at school many of them help out with a view to one day taking over from their elders. CORAL have also provided funding to areas where diving and fishing traffic is high; this has allowed a series of mooring buoys' to be installed at sea that allow boats to be stationary in the water without actually dropping their anchor.

In these areas this has dramatically reduced damage to coral from careless tourist vessels. As boat traffic around the coasts of Thailand is somewhat out of control due to the sheer numbers of tourists taking part in marine

recreation; this could be an easily viable solution. In Indonesia, a system has been set up where their sustainable tourism projects are to be self sufficient and financially independent. CORAL and its partners provided the funding and a system to introduce a user fee into the marine protected areas of Raja Ampat.

The fee is US\$55 which gives the 2000 visitors year long access to the area, the proceeds are split between managing the park and other projects that benefit the local community; such as mosquito nets, water filtration systems and medication (Leniuk, 2009). Due to the need for minimal continued investment this system could be introduced into Thailand with the help of an organisation like CORAL, which has past experience in the matter.

In the case of Thailand however, where basic human needs are better tended to than Indonesia, I would suggest that the profits be reinvested into the continual marine education of locals in the tourism industry around the protected areas. Another method employed by the GBRMPA in Australia is idea of a zoning policy. In this system the marine protected areas are divided up into specific zones for specific uses. The first of these zones is the Shipping Areas which allows for the safe passage of marine transport through the reefs.

The second is the Special Management Areas which are there for sections of reef that require special management; for example, areas that need respite from over activity or time to replenish from over fishing. The final zone is the Fisheries Experimental Areas that are in place for researchers to carry out their experiments in controlled environments. According to the GBRMPA the

idea seems to have helped secure the future of the reefs in Australia and I believe that it has the potential to work in Thailand; especially the first two zones, which would help ease the problems of over tourism around areas of the reef (G. B. R. M. P. A. , n. d. ).

The biggest obstacle to achieving this in Thailand would be finding a way to monitor it and punish offenders. The Thai police force would be somewhat stretched to monitor adherence to this policy, without a large increase in funding. However, should this be used in conjunction with a system that generates revenue for the marine protection agencies, training could be provided to help locals assist police in monitoring the zones as they go about their day to day jobs. Agenda 21 is a global action plan dealing with land based sources of pollution with a view to global sustainability (C. E. P. , 2010).

One of the plans it outlines looks at sedimentation and runoff from land activities. If Thailand tried to adhere to such action plans it could significantly reduce the negative effects of building tourist resorts in coastal areas. While it would be difficult to monitor regulation adherence, large fines could be imposed on the international corporations commissioning the buildings, and not the builders building them. The expense then falls with the large firm, and should promote them to ensure good practice.

From my own experiences of travelling in Thailand I can say that it is a nation heavily reliant on its tourism industry; this is no more apparent than around the coastal areas of the south, where many rely on this industry for their livelihoods. It is quite easy to see why with its phenomenally diverse

eco-systems and beautiful scenery. When the economic advantages are so strong it is very easy to lose sight of the long term, and forget about how vital it is to sustain such a resource. In addition, Thai people have the propensity to turn the other cheek, and as many people live below the poverty line, bribery and corruption are not uncommon.

However, the Thai people are an incredibly proud race; and I'm sure, if presented with an option would do all they could to protect their coral reefs, and prolong their magnificence. The government must appeal for help from its patrons through heavy investment in marine education programmes, and tighter monitoring of regulations on marine tourism. In light of the above it is blatantly obvious that it must act fast to secure the long term prosperity of such a key resource and tourist attraction; the coral reefs.

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