

Economic development of the great barrier reef report

[Technology](#), [Development](#)



Introduction.

As mans impact on this pale blue dot with its complex and fragile natural cycles and ecosystems becomes increasingly more evident and concerning, it is up to the people to take initiative and pride themselves on minimising and hopefully one day in the far future reverse the harm we have caused to our one and only planet. It is due to our ignorance, greed and trust in the powers that be that have brought the climate to where it is today. So as conditions worsen we must hold governments accountable and implement strategies that protect natural systems whilst supporting the global economy. As we know more about the universe than our planet's seemingly alien world being the ocean and its inhabitants and we know it is the device that controls the weather it seems illogical that we treat it as a young child poking sticks at it to see how it responds. The unfortunate truth is that this is exactly the case. Australia's crown jewel, the largest living structure on earth, one of the natural wonders of the world, The Great Barrier Reef is included in this global issue and is under increased threat. This report will be assessing whether current legislation is effective in assessing economic development impacts whilst maintaining the biodiversity and ecosystem function of the Great Barrier Reef.

Overview of the Great Barrier Reef: its biophysical context and the history of management.

The Great Barrier Reef is one of the largest and most biologically diverse ecosystems in the world and is listed by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) as a world heritage area. It is

composed of over 900 islands and 2900 individual reefs. It the planets largest living structure composed of coral polyps that cover a surface area of around 344, 400 square kilometres. Its existence has spanned some 10 000 years (Bowen 2002). This barrier reef has been used by the Torres Strait Islander and the Aboriginal Australian people as part of their special group cultures and for spiritual matters.

Below is a geographic map showing the Great Barrier Reef features and the marine parks

The biophysical context of the Great Barrier Reef study recommended by the independent steering committee showed that the Great Barrier Reef marine park is not enough to maintain the biological diversity and ecological integrity of the reef into the future. The reasons cited were, not more than 5% of the marine park is currently in no - take land where about 70 bioregions in the Great barrier reef world Heritage area is very minimal or nonexistent, the existing areas are majorly confined to coral reefs north of the marine park. It was also found that new Green Zones will be created and the existing ones may be expanded to achieve a higher protection of biodiversity. The existing range of multiple-use-zones remains where most activities are allowed in the new national park zones. The reef comprises of 14 coastal ecosystems that are very crucial in the functioning of the entire reef. Some of them are coral reefs, lagoon floor, and fresh water lands among others.

The management of such a vast area is by no means an easy task and in 1975 the Australian government created the Great Barrier Reef Marine park and since then it has been the Great Barrier Reef Marine Park Authorities

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(GBRMPA) in partnership with Government of Queensland responsibility to manage and limit the impact of human activities such fishing and tourism. In 1999 the parliament of Australia passed an act on the Biodiversity conservation and Environment protection to provide guidance on regional biodiversity conservation priorities. The agency claims to have a specific focus on critical issues surrounding water quality, coastal development, fisheries, tourism and recreation, and conservation. (Technical Information Sheet #11 Representative Areas Program background and history). After the Australian Government approved a liquid natural gas processing plant on Curtis Island in 2010 before being assessed by the World Heritage Committee (WHC) for potential environmental impacts, the (UNESCO) began a reactive monitoring mission after the request was made by the world heritage committee (McGrath 2012). The purpose was aimed at assessing the state of conservation and to contribute to a Strategic Assessment process. It also highlighted the possibility of relisting the marine park as world heritage in danger and also highlighting the possibility of being listed as a World Heritage Site in danger (Douvere 2012). Since then the Australian government has released a report criticising the current management of the Great Barrier Reef.

A review of proposed economic development.

Export industries along the four pillar Queensland economy are positioned inland side of the great barrier reef thus making ports a crucial in growth of states economy in that region. As Australia is a mass producer of essential resources, it has in the past been able to avoid economic decline through its

reliance on the resource boom it seems obvious that maintaining the infrastructure needed to produce resources is of utmost importance to the stability of our economy. Major shipping ports litter the coastline adjacent to the Great Barrier Reef. Further development of existing ports, as well as the establishment of new ports is planned for the future. Other economic development activities in the area proposed in the region include tourism, agriculture and construction . The world's largest coal export port is located at Dalrymple Bay/Hay Point and is expected to see further development along with other ports located at Abbot Point and Gladstone.

The table below shows annual coal export and CO2 emission levels in the year 2007-2008.

New facilities are also being projected to be established at the North of Gladstone deemed (the Fitzroy Terminal Project), Balaclava Island and between Princess Charlotte bay and Bathurst Bay deemed (the Wongai Project). It is estimated that ports in place have the ability to export some 250 million tonnes of coal per year with that number set to increase to 350 million after further development is complete (McGrath 2012).

The table below shows annual coal export between 2005-2007.

Tourism activities at the Great Barrier Reef account for around A\$ 6. 9billion annually, according to (Franton 2012), with approximately two million tourist visiting the area. Keeping this trend for future generation various strategies and developments have been proposed. These tourist economic development strategies include building of more hotels and other tourist

hospitality facilities (Kelly 2012). More regional centres like an international airport in Cairns and improved transport links like high -speed modern facilities which can increase the trips to the reef with over 100 nautical miles. Currently 730 tourism operators and around 1500 vessels and aircrafts are allowed to operate within the Great Barrier Reef but there has been laid down to increase this figures by about 25% in the near future. Other development proposals include construction and operation of a new water recycling plant to service the growing population demand at Sarina in plane creek, construction of a new underground coal mine in Laura basin, 150 km northwest of Cook town in Queensland and also another coal export facility at Port Alma, expansion of the port of Townsville (disposal, dredging, land reclamation and construction of infrastructure), development of a Multi Cargo Facility at Abbott point. This facility will involve dredging of a shipping access channel, swing basin and berth pockets , reclamation to construct a protected harbour and construction of a haul road, port access and a service corridor. Another very crucial development proposal is to raise, construction, and operation of the existing Eden Bann Weir near Rockwood crossing and also an associated water infrastructure and also to construct and operate an offshore and offshore infrastructure for the 60 million tonne per annum Abbot Point coal terminal including stockyard rows and a storm water return dam.

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The graph below shows the global tourists arrivals in Australia in relation to other countries.

Likely effect of the environmental impacts of the proposed developments on the biodiversity and ecosystem function of the Great Barrier Reef.

According to a research done by Australian scientists, ironically the coal exported through the port systems along the coast of the Great Barrier Reef is largely responsible as the main threat to the Great Barrier Reef. Other factors coupled to this are the effects of increased shipping activity and dredging. However, according to (Hoegh-Guldberg 2010) other stressors that affect corals include overfishing and reducing water quality.

The machinery used at the port for the expansion and also general operation not forgetting the smoke emitted by the ships among other factors account for the increase in ocean acidification by about 500 parts per million, which is the greatest threat facing the Great Barrier Reef to date. This acid is reported to change the PH of the water subsequently affecting the coral reef ecosystems (Mark 2013) The origin of this acid that dissolves in the water originates from CO₂ released from the atmosphere from the ports expansion activities . Increased amounts of acidity of sea water reduces the holding capacity of corals and other calcifying organisms to build up their skeleton, shells and scales with calcium carbonate which forms the sediments and in turn forming the reefs.

According to (Guinotte 2000) dredging stirs up sediments thus making the ocean water cloudy and more turbid hence making sunlight to hardly pass through the water which corals need. This insufficient amount of sunlight stresses the corals and in turn making them to grow very slowly. Dredging

also affects sea turtles and dugongs, and with the subsequent dredging activities, then these animals will be pushed to extinction according to (leck 2011)

The increase in the size of the port due to expansion comes hand in hand with the increase of the number of ships visiting the ports. More often the port suffers shipping accidents. This accidents result in wrecks which have drastic effects in the ecosystems. In addition the ships releases a toxic substance referred to as Tributyltin (" TBT") which is used to preserve the conditions of the sea hulls. This substance brings in toxicity in the marine ecosystem thus destroying marine life.

Another negative impact to the environmental biodiversity is due to the alarming rates of tourists who visit the reef, an annual amount of between two to three million tourist visits are noted annually in the reef. Hardly do they know that they are unintentionally contributing to the general decline of the reef by various activities such as reef walking, using of submersibles and also runoffs from certain sunscreens are contributing factors. This numbers also comes with environmental pollution by littering the reefs coast this affects the immediate bio systems of the corals.

An expansion of the port attracts more and bigger fishing vessels, this continuous and heavy fishing leads to overfishing. Fishing accounts to close over \$1 billion to Australia in terms of annual national profits. Expansion of the ports attracts fishing not only for commercial purposes but also for leisure by mainly tourists. Trawling for various types of permitted fish (molluscs and prawns) unintentionally leads to other species being caught which aren't targeted thus making them get wasted; the nets themselves

that they use to trawl can damage the sea floor due to their dragging effect this in turn damages the habitats for the marine organisms.

Conclusions.

According to the above discussion it is very evident that the Great Barrier Reef is under threat majorly due to the human activities that are taking place at the reef especially the activities that come due to expansion. However, according to (Mark 2013), it's not only the human activities that contribute but also natural occurrences like climate change . Due to this threat of losing the reef, UNESCO has come out with a very strong report indicating that there are no sanctions that UNESCO can apply to Australia, but sanctions can certainly come from the Australian public if there's a downgrade to the listing, because there'll be a huge fallout if that happens.

Recommendations.

Part of the solutions from the above mentioned problem is managing human activities (Richmond 2013), human activities like dredging, oil spills, air pollution by realising carbon dioxide and other green house gasses from the operating machinery, factors that lead to global warming and littering of the environment can be addressed by placing stringent environmental policies and strict penalty policies on pollution, according to Richmond (2013) because 95% of the causes of destruction of the Great Barrier Reef are human activity centred, managing this activities well will save the great barrier reef from destruction.

References

- Authority, Great Barrier Reef Marine Park. " Department of Sustainability, Environment , Water, Population and Communities." The Great Barrier Reef strategic Assessment Fact Sheet, 2012: 1-4.
- Authority, Great Barrier Reef Marine Park. " Tourism operator's Handbook for the Barrrier Reef." Tourism operator's Handbook for the Barrrier Reef, 2010: 65-80.
- Development, International Institute for Environment &. Economic Value of Ecosystems: 4 - Coral Reefs, the - 8052iied. Street path: IIED, 1992.
- Douvere F, Badman T. Monitoring Mission to the Great Barrier Reef (Australia). Mission report, Paris: ICUN and UNESCO, 2012.
- James Bowen, Margarita Bowen. The Great Barrier Reef. Cambridge: Cambridge University Press, 2002.
- . The Great Barrier Reef. Cambridge: Cambridge University Press, 2002.
- McGrath, Dr Chris. " Australian Environment Review." UNESCO/IUCN reactive minitoring mission report on the great Barrier Reef, 2012: 253-257
- Norrie, Justin. UNESCO's Great Barrier Reef report: experts respond . june 4, 2012. <http://theconversation.com/unescos-great-barrier-reef-report-experts-respond-7435> (accessed september 7, 2013).
- Ogburn, stephanie Paige. " SCIENTIFIC AMERICAN." Coal Development Threatens Great Barrier Reef , 2013: 50-55.
- Pat Hutchings, Mike Kingsford, Ove Hoegh-Guldberg. The Great Barrier Reef: Biology, Environment and Management. Collingwood: CSIRO publishing, 2008.
- Sadovy, Yvonne. Reef Fish Spawning Aggregations: Biology, Research and <https://assignbuster.com/economic-development-of-the-great-barrier-reef-report/>

Management: Reef Fish Spawning Aggregations: Biology, Research and Management. New York: Springer publishers, 2011.

Susan Bermingham, Bob Digby. Changing Environments. Oxford: Heinemann publisher, 2000.

Williams, Christopher. The Geobiology and Ecology of Metasequoia. New York: Springer publishers, 2005.

Burdon, Daniel. "Sunshine Coast Daily." Debate over Great Barrier Reef dredging reaches fever pitch, 2013: 24-45.

C, William. Adjudicating Climate Change: State, National, and International Approaches. Cambridge: Cambridge University Press, 2009.