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Tubbataha Reefs Natural Marine Park

The Tubbataha Reefs Natural Marine Park is a protected area and World Heritage site consisting of 130,028 hectares located in the Philippines. The protected area is known for its diverse species of marine life which includes various species of coral reefs and fish. Before the area became protected, there were high rates of fishing conducted by the explosion of coral reefs with dynamite. In addition, many aspects of the area were exploited due to human activity. Today, the area is protected but suffers from severe effects of climate change. Under legal protection, stakeholders and Philippine locals and park employees are working to mitigate the effects brought on by climate change. Stressors such as the increase in water temperature and coral bleaching have led to the protection of coral reefs within the Tubbataha Reefs Nature Marine Park in order to ensure a healthy environment for the marine life; this has been done through an established management plan and due to stakeholder involvement. This paper will explore the impact of climate change on the Tubbataha Reef region, how legal protections are acting to mitigate these impacts, and the legal tools and objectives involved in protecting the marine area.

Impacts of Climate Change on the Tubbataha Region

The impact of climate change on the Tubbataha region is causing intense changes in the region's surrounding waters. Stressors such as an increase in the ocean's water temperature, ocean acidification, and coral reef bleaching are caused and continue to be exacerbated by the occurrence of climate change (TRNP 2012, *Threats*). Coral reef bleaching is the main threat to

Tubbataha's marine life as it serves as a habitat for much of the aquatic life. In the process, the coral reefs begin to lose their color, or their zooxanthellae, which is unhealthy for their own survival as well. The Tubbataha region has undergone major bleaching events, most notably in 1998 and 2010 which created the greatest amount of damage to the reefs. The 1998 bleaching event resulted in an 18% decline in Tubbataha's coral reef cover (TRNP 2012, *Threats*). In 2010, nearly 95% of the Tubbataha's reefs were effected by climate change effects due to an increase in the water temperatures brought on by the warming phase El Niño (TRNP 2012, *Threats*).

While the Tubbataha Reefs Natural Marine Park has been deeply affected by climate change and coral reef bleaching, the Park has witnessed many improvements due to the Park's resilience. Coral reefs have recovered from bleaching and many did not die which is unique to the area as other coral reefs in the Philippines have not been as lucky. The belief as to why they recovered in the Tubbataha Natural Park is due to the protection of the coral reefs within the Park such as the elimination of fishing and human activity, or human-induced pollution, as they are no longer permitted (TRNP 2012, *Threats*). Therefore, these additional stressors are no longer in the area to exacerbate the issue of coral bleaching in the Tubbataha Park. The human activities which caused the additional stressors were banned due to the implementation of legal protections on the Park which work to mitigate climate change impacts as well as to eliminate illegal activities.

Management Acting to Mitigate Climate Change Impacts

The illegal activities which occurred in the Tubbataha region, and which are now banned, included fishing by dynamite explosions and the collection of Topshells by tourists which are the region's "protected shell species" (TRNP 2012, *Threats*). These activities contributed to the exacerbation of climate change effects and brought on additional stressors to the region which

lead to higher rates of coral bleaching. Due to legal protections over the area, additional stressors brought on by humans have been reduced which has consequently led to a higher potential of reef survival (White & Ovenden). The adaptive management responsible for the protection of the Tubbataha Reefs Natural Marine Park began in 1990 when “sporadic patrols started to stop illegal and destructive fishing” where elimination of illegal activities continued (White & Ovenden). The Marine Park Rangers for the area were established in 1995 in order to mitigate climatic and human-induced effects. The Marine Park Rangers include members of the Philippines navy and coastguard, who work to protect the Park from illegal activities in addition to conducting “surface and underwater cleanups, scientific research and monitoring, [and] briefing tourists” (TRNP 2012, *Management*). In addition to the Marine Park Rangers, the Tubbataha Protected Area Management Board (TPAMB) was established and became heavily involved in the Tubbataha region in 1999 after the coral bleaching event occurred in 1998.

The board was established in order to ensure further protection over the region as “the only mitigating measure for the expected increasing intensity and frequency of elevated sea surface temperatures related to the ‘El Niño’ phenomena that occurred in 1998 is improved management of coral reefs” (White & Ovenden). In other words, it is because of the “improved management” in the Tubbataha region that the area is protected and why the effects of climate change in the area have been mitigated. The board consists of twenty members, who are all apart of national and local governments and are considered stakeholders. The members and organizations involved consist of a wide range, from the WWF-Philippines, the Bureau of Fisheries and Aquatic Resources, the Conservation International-Philippines, to the Palawan State University (TRNP 2012). One of the most significant decisions the board has made was in 2000 when the members of the TPAMB endorsed a management plan which led to the creation

of the Tubbataha Management Office (TMO) in 2001. According to the Tubbataha Reef's website, the TMO "serves as the TPAMB's executive arm, carrying out day-to-day park administration" which adds more protection over the Park (TRNP 2012, *Management*). The TMO is made up of sixteen administrative members who serve as part of either the local or national governments involved.

One of the final acts of policy implemented to protect the Tubbataha Reef Natural Marine Park was The Republic Act 10067 of 2009, or more commonly known as The Tubbataha Reefs Natural Park Act (TRNP Act), which "provides the legal and institutional framework for enforcement in the Tubbataha Reefs" (TRNP 2012, *Management*). This final piece of legislation has contributed to the survival of numerous coral reefs in the Tubbataha Marine Park. However, while management and policy have been effective in protecting the Park, there is still more that needs to be done and seen in the Park. According to the World Heritage Centre, the area would be more effective if buffer zones were implemented and if the area had additional support from international legislation in order "to protect the property from shipping threats" and to enforce further regulation (UNESCO WHC 2016). Engaging with other countries has already been in the works for the Park, which includes support from the Western Command of the Armed Forces of the Philippines who are helping the Park's management with countries who have been caught poaching in the area (TRNP & WHC, 18).

In addition to the TRNP Act of 2001, the Philippine government have included various other Republic Acts into the Tubbataha Management Plan which "call for the protection of biodiversity and land/seascapes" and thus add additional protection to the Tubbataha Reef Natural Marine Park (TRNP & WHC, 4). Each of the Republic Acts, which include The Philippine Fisheries Code of 1998 and the Wildlife Resources Conservation and Protection Act

of 2001, work toward wildlife conservation in the Tubbataha region and to protect the people (of today and of future generations) of the region as well (TRNP & WHC, 4). The Management Plan and Republic Acts are enacted by the stakeholders of the Tubbataha Protected Area Management Board (TRNP & WHC, 6).

Governance Structure and Involvement in the Tubbataha Park

According to the Tubbataha Management Plan, the TPAMB and working partners in the Tubbataha Adjudication Board (TAB) meet every handful of months in order to discuss “policy issues” within the Park (TRNP & WHC, 9). What keeps the Tubbataha Reef Natural Marine Park safe and protected is the amount of government, and non-government, involvement in the Park. In addition to TPAMB and TAB meetings, the stakeholders involved in the Park have proven to be a “critical role” in protecting the reefs and the Park as a whole (TRNP & WHC, 10). Stakeholders are included in TPAMB and TMO meetings and are regularly assessed of their work to ensure close protection of the Park as well as strong professional relationships with the other forms of management (TRNP & WHC, 24). The Management Plan states that “the TPAMB strives to develop an informed public constituency by directly engaging the various sectors in issues and concerns involving the Park” and while this involvement is limited due to “seasonal access and isolation” there are numerous organizations and members doing their part for the coral reefs (TRNP & WHC, 10).

Much of the area’s protection has come from the limited activity allowed in the Park. While people are still allowed to visit the Park, the Marine Park Rangers and regulation enforce strict security within in the Park to ensure that people are only visiting. However, if more human activities were to be allowed in the Park, management has ensured they would devise a Tourism Development and Management Plan to keep everything in order (TRNP & WHC, 14). These

activities would include snorkeling, bird-watching, and other leisure activities all of which would be sustained and monitored in order to prevent human-induced climate change and pollution to the Park (TRNP & WHC, 14). Therefore, the public is informed about the use of the Park and it is important to the management of the Park to include them and to allow them to appreciate the marine life; however, it is also important that the public is not *too* heavily involved in terms of activities. Touring the Park and conducting research in the Park, however, is acceptable.

The Tubbataha Management Plan includes a list of governance indicators for the Park which is used to discuss the methods and units of measures taken for all involved. The methods used within the Park depend on the “relevant indicator” (TRNP & WHC, 24). For example, if the management of the Park wants to adopt a new management plan, the method taken for this practice includes a “key informant interview” as well as a “review/evaluation of the plan” (TRNP & WHC, 24). Most examples of the methods used by the Park’s Management include intense review of legislation and policy, as well as “enforcement records” before taking on new forms of management and protection (TRNP & WHC, 24).

Summary

The Tubbataha Reefs Natural Marine Park is an area which is incredibly resilient. After witnessing immense coral reef declines since the 1990s and in particularly in 1998 and 2010, the Park has undergone tremendous efforts in order to revitalize and Park and the coral reefs. Today, the Park serves as a World Heritage Site and is a place with limited access to the public. While tourists and researchers are welcome, the Park’s management is strict and serious about the health of marine life. The illegal activities of fishing by exploding the reefs with dynamite and of Topshell collection have led to the protection of this area and the coral reefs and other marine life have recovered well.

However, the issue of climate change still takes its toll onto the Park which is why so many branches of management, including government and non-government officials, have been implemented. The protection of the Park has eliminated additional human stressors onto the coral reefs but many areas of the Philippines, including the Tubbataha Reefs Natural Marine Park, are still at great risk of damage from climate change and its effects. This paper discussed the already established forms of management and protection for the Tubbataha Reefs Natural Marine Park. As the Tubbataha Management Plan is still full of ideas, and various forms of protection, for the Park in the upcoming years, the marine life will continue to be protected and thrive.

Works Cited:

- Tubbataha Reefs Natural Park. (2012). *Management*. Tubbataha Reefs Natural Park World Heritage Site. Retrieved from <http://tubbatahareef.org/wp/management>.
- Tubbataha Reefs Natural Park. (2012). *Threats to Tubbataha*. Tubbataha Reefs Natural Park World Heritage Site. Retrieved from [http://tubbatahareef.org/wp/Threats to Tubbataha](http://tubbatahareef.org/wp/Threats_to_Tubbataha).
- Tubbataha Reefs Natural Park & World Heritage Site. (2011). Management Plan: 2011-2021. Retrieved from <http://tubbatahareef.org/wordpress/wp-content/uploads/2012/11/Management-Plan-2011.pdf>.
- UNESCO World Heritage Centre (1992-2016). *Tubbataha Reefs Natural Park*. World Heritage List: Tubbataha Reefs Natural Park. Retrieved from <http://whc.unesco.org/en/list/653>.
- White, Alan T. & Ovenden, M. (n.d.). Tubbataha Reef National Marine Park in Palawan: *Coastal Conservation and Education Foundation, Inc. (formerly Sulu Fund)*. Retrieved from http://www.oneocean.org/download/db_files/tubbataha.pdf.