

## Preserving a Cultural Heritage: the Decline of the Dugongs

*Muyi Li, Academic Magnet High School*

When thinking about animal cruelty, many people tend to navigate their thoughts to puppy mills, animal test subjects, and dog fights; not many will think about the beautiful animal swimming in the shallow tropical coastal and island waters of the Indo-Pacific, the dugong (WWF, 2004). Dugongs are large marine mammals with kind eyes and gentle smiles threatened by habitat loss, coastal pollution, fishing pressure, and indigenous hunting (Marsh, et al., 1995). IUCN lists the animal as vulnerable to extinction, but ironically not many people have even heard of it (IUCN, 2000). However, the animal holds a special place in my heart because it provided the inspiration for my favorite mythical creatures: mermaids. Few animals have contributed as much to human culture as dugongs, and therefore it is our duty to protect a piece of our culture before it disappears for eternity.

As stated above, the dugong is an herbivorous marine mammal that feeds on sea grasses in the shallow tropical coastal waters of the Indo-Pacific. It weighs anywhere from 506 to 1997.6 pounds and has thick, tough, and smooth skin (Fox, 1999). A dugong usually reaches sexual maturity at age nine and breeds throughout the year. Its length of gestation is about a year and usually only single calves are born. After the calves are born, they remain with their mothers for about a year, making reproduction a lengthy process for dugongs, contributing to their decline. While dugongs used to exist in great numbers throughout the Indo-Pacific, now they only remain in small numbers in Australia, Kenya, Tanzania, Mozambique, Comoros, and Seychelles, becoming the most endangered large mammal in the region (Dutton, 1994). The habitants in these regions

are some of the poorest in the world, and their main source of income is fishing, which leads to overfishing, habitat destruction, and pollution in the area (Kemp, 2000; IUCN, 2000). The population is also expanding in these areas, causing unplanned urbanization and again habitat destruction.

In recent years, the deliberate captures of dugongs have decreased due to their waning populations (WWF, 2004). However, humans still hunt dugongs for meat, oil, leather, and ivory artifacts (Fox, 1999). Some Asian cultures utilize dugong products as medicine. Therefore, data continues to indicate that dugong populations have suffered a steep decline since the 1960s (IUCN, 2000). This steep decline is not only caused by hunting, but mainly caused by the pollution of costal waters with fishing gear, in which the dugongs could entangle themselves, and destructive illegal fishing techniques, such as dynamite or poison. Fishing gear sets forth many dangers for dugongs because accidental drowning in shark and gillnets is a major cause of dugong mortality (WWF, 2004). Coastal development, which indirectly causes many fishing problems, is responsible for dugong's population decline as well.

The shallow water habitats of dugongs and their slow reproduction rates render them extremely vulnerable to human activities, such as trawling and mining (WWF, 2004). Due to the industrialization of the countries in the Indo-Pacific, dugongs' habitats are in danger of degradation and pollution from land clearance and urbanization. Many cases of dugong starvation have occurred in Australia due to the large-scale sea grass loss due to urbanization. In the Arabian Gulf, oil spills in the ocean pose a significant threat to the animals as well.

The final major human threat to dugongs is boat traffic and ecotourism, which occur in many of the areas that dugongs swim in (Korrubel & Cockcroft, 1997; Marsh et al., 2000). Sometimes, vessel strikes, acoustic pollution, and diseases that occur due to the industrialization and increased traffic of certain areas of the Indo-Pacific threaten dugongs.

Even though the dugong has been hunted since early times, they still need to be protected today because they are such a critical part of human culture. Not only did they supply the inspiration for mermaid stories, but they also play an important role in local cultures in Australia, Kenya, and Tanzania, where they have existed for centuries (WWF, 2004). Additionally, dugongs are extremely close cousins of humans, sharing the cryptosporidium partum genotype, and being the only animal other than primates to contain this genotype (Morgan, et al., 2000). Therefore, if we have so many conservation and education programs for primates such as chimpanzees, why should we not have them for dugongs? They are just as important to our culture and are almost as closely related to us as other primates, then why do cute pandas pop up in our minds when we think about endangered species and not the loving dugong?

Even today, information about dugongs is scarce. Most dugong conservation efforts have been isolated, and no collaborative regional-scale effort has occurred until 2003. In 2003, seven countries in the Indo-Pacific region gathered information on the status and threats to dugongs and made recommendations for conservation of the animal (WWF, 2004). The UNEP provided financial support for this conservation effort. Some conservation techniques that they recommended were: establishing dugong sanctuaries, strengthening laws against the use and disposal of fishing gear, initiating a public

awareness campaign about dugongs, and establishing a regional network for dugong conservationists.

The outlook for dugongs is not completely bleak as countries are beginning to recognize the problem and creating sanctuaries for them. Some sanctuaries and educational centers include the Kiunga Marine National Reserve, the Mafia Island Marine Park, and the Bazaruto and Quirimbas National Parks (WWF, 2004). The most important program is probably the Eastern African Marine Ecoregion program, which is attempting to increase the population of dugongs by 10% by 2015 by boosting the interests and commitments of governments in the Indo-Pacific region.

To save the dugongs, I propose a plan in three parts. The first part includes an education program about dugongs and possible ways to protect this species in all areas of the world because the more the world knows and cares about the species, the better off the species will become. With better knowledge about the animal, those living in the areas with dugongs will be more careful with their fishing gear and boats to protect the animal. Additionally, those living in areas without dugongs but with higher incomes will be more interested in the animal, protest for more protection and conservation programs for the animal, and provide financial assistance for these programs, which many countries in areas with the dugong cannot afford. Ignorance is not bliss, but is rather something that the world cannot afford to have towards a species on the brink of extinction.

The second part of the plan includes a financial support plan for the areas with dugongs. The nations in which dugongs inhabit are typically poor, transitional countries that are trying to industrialize as fast as possible without any care for pollution. They put all their money into factories and urbanization projects, not caring about the animals'

habitats that they are destroying and the pollution in the waters that they left behind. Also with poorer countries, people tend to resort to desperate solutions such as hunting endangered species rather than gaining income through legal means. With financial aid, these countries can afford to be more environmentally friendly and therefore saving many endangered species such as the dugong.

Finally, the last part of the plan is to enforce the law prohibiting fishing in areas with dugongs more harshly and even enact laws to encourage fishermen to recycle nets and string by hiring more policemen to watch over the people and setting up recycling stations near the banks of the river. Many countries are having trouble enforcing these laws or even passing it due to their reliance on the fishing industry, but with advanced industrialization and financial support, they may be able to give up some efficiency for environmental protection. Personally, I have not contributed to the relief of the dugongs because they only inhabit the Indo-Pacific. However, I am a member of the environmental and science club, and go on beach sweeps to clean the rivers and beaches around the area for a cleaner habitat for marine life.

With help from many people around the world, I believe that we can preserve this species-this precious part of our culture. Due to the slow reproduction rate of the animal, immediate relief may not be possible, but we cannot become discouraged. With time and more conservation efforts, dugongs can be saved for generations to come. Hopefully, humans hundreds of years from now will still be able to enjoy the beauty and grace of these “real-life mermaids”.

*Words: 1407*

## References

- Dutton, P. 1994. Past and present status of dugong *Dugong dugon* in the Bazaruto Archipelago and other known habitats on the Mozambique Coast. In: Anon. (ed.). *First International Manatee and Dugong Research Conference: Conference Papers*. Gainesville, Florida.
- Fox, D. 1999. "Dugong dugon" (On-line), Animal Diversity Web. Accessed March 01, 2009 at [http://animaldiversity.ummz.umich.edu/site/accounts/information/Dugong\\_dugon.html](http://animaldiversity.ummz.umich.edu/site/accounts/information/Dugong_dugon.html).
- IUCN (The World Conservation Union) 2000. The 2000 Red List of Threatened Species. IUCN, Gland, Switzerland.
- Kemp, J. 2000. WWF-Eastern Africa Marine Ecoregion: Biological reconnaissance final report. WWF.
- Korrubel J & Cockcroft, V. 1997. Dire days for dugongs. *Africa-Environment & Wildlife*. Vol 5. No 1: 28-33.
- Marsh, H., Rathbun, G.B., O'Shea, T.J. & Preen, A. R. 1995. Can dugongs survive in Palau? *Biological Conservation*. 72: 85-89
- Marsh, H., Eros, C., Corkerton, P & Breen, B. 1999. A conservation strategy for dugongs: implications of Australian research. *Marine Freshwater Research*. 50: 979-990.
- Morgan, U. M., Xiao, L., Hill, B. D., O'Donoghue, P., Limor, J., Lal, A., & R. C. A. *The Journal of Parasitology*, Vol. 86, No. 6 (Dec., 2000), pp. 1352-1354

WWF Eastern African Marine Ecoregion. 2004. Towards a Western Indian Ocean  
Dugong Conservation Strategy: The status of Dugongs in the Western Indian  
Ocean Region and Priority Conservation Actions. Dar es Salaam, Tanzania:  
WWF. 68pp