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## How are the Torres Strait Islander's Traditional Hunting Practices Affected by the Current Rate of Decline in Dugong and Sea Turtle Populations and The Australian Government's Co-Management Policies on Marine Preservation?

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How are the Torres Strait Islander's traditional hunting practices affected by the current rate of decline in dugong and sea turtle populations and the Australian Government's co-management policies on marine preservation?

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## **Abstract:**

This paper will attempt to identify the extent to which the Torres Strait Islanders traditional hunting practices have been disrupted by the overall decline in dugong and sea turtle populations, which has directly correlated to an increase in hunting restrictions put in place by the Australian Government. The traditional hunting of dugongs and sea turtles provides not only a food source, but brings prestige to the men who catch them and serves as an educational platform to teach the younger generations about their culture. There are many environmental threats that impact the populations of sea turtles and dugongs though the main threats are loss of habitat and food source. The primary food source, seagrass, is extremely sensitive to environmental changes and affects how many marine species the ecosystem can support. The populations have to be monitored closely in order to prevent overhunting and the extinction of these majestic species.

The Torres Strait Islanders maintain a rich culture and have faced many hardships; hardships most recently due to the restrictions of colonialism. In recent years they have been granted the rights to their traditional lands, reefs, and natural resources. Many indigenous groups worldwide are at odds with their federal governments of their countries over land and natural resource rights. Though these indigenous people may consider themselves to be the original owners of the land or resources through process of dispossession and colonialism they have lost this ownership and corresponding rights. The Australian Government and the Torres Strait Islanders are working to combat decades of post-colonial attitudes and practices regarding land and resource management by working within a co-management system. This system is designed to give the indigenous populations a forum to voice their concerns and be part of this instrumental decision making process. Both for cultural and subsistence reasons the Torres Strait

Islanders have a vested interest in the protection of dugongs and sea turtles for future generations. This connection precludes remaining animosity or hostility toward the once colonial authority and offers a foundation on which the Torres Strait Islanders are willing to cooperate with the Australian Government on the development of restrictions for traditional hunting practices until the populations of these species are able to rebound.

## **Introduction:**

The Torres Strait Islands are a group of approximately 274 islands located between the Cape York Peninsula of Australia and the southern tip of Papua New Guinea. The Torres Strait Islanders are the indigenous population of the region; only a declining population still lives there today. 6,800 people live there today although 42,000 identify themselves as Torres Strait Islanders (Australia Now, 2006). They are considered a separate ethnic group from the mainland Australian Aboriginals. They maintain a rich culture and have lived there for over seven thousand years with a deep connection to the sea and marine species around them. There are slight cultural variations between the islands though they all practice similar cultural traditions. In the past they have traded with the mainland Aboriginals and Papua New Guineans for outside resources they could not get on their islands and provide these groups with marine goods. Their culture's Dreamtime tales, origin myths, describe them as the original owners of the Great Barrier Reef and thoroughly describe the creation of dugongs and sea turtles by their ancestors. These species are extremely important to these people not only for subsistence purposes but also spiritually.



*Location of the Torres Strait Islands*

For generations these people have hunted the native sea turtles and dugongs off their coasts, they hunt them for subsistence and ritual purposes. “Marine species such as green turtle and dugong, endangered species elsewhere in the world, are hunted only for consumption by indigenous inhabitants are not to be sold,” (Fitzpatrick 2001). Both dugongs and sea turtles have dwindling populations worldwide but are populous in the Torres Strait region. Their populations are at risk today due to an increasing loss of habitat and food sources.

There are seven species of sea turtles that inhabit all of the world’s oceans excluding the Arctic region. The seven species are Flatback, Green Sea Turtle, Hawksbill, Kemp’s Ridley, Leatherback, Loggerhead, and the Olive Ridley. All of the species can be found in the Torres Strait Islands, it is the only region in the world the Flatback can be found. They spend the majority of the lives at sea migrating only going to the beach to lay eggs. It can take up to a decade for a turtle to reach sexual maturity and as the populations dwindle it is increasing hard to find a mate. Most females return to the beach where they hatched to lay their own eggs. A female can lay from fifty to two hundred eggs in a single nest. Most females do not nest every year however in one season they can lay up to seven nests. Even though a female can lay so many eggs only a few of their offspring will survive their first year of life. All of seven of these species are considered endangered throughout the world. There are many threats against them today including, habitat destruction, by-catch, pollution, loss of suitable food sources and more. Throughout the world there are conservation projects that are working to protect these marine species from extinctions.



*Green Sea Turtle*

The dugong, a cousin of the manatee, is a marine mammal that mainly lives in the Indo-Pacific. The Torres Strait Islands have the world's largest population of dugongs. They are considered a threatened species however they have become extinct in a few regions. Dugongs have a very slow reproductive rate; it takes eight to eighteen years for a dugong to reach reproductive maturity. The gestation lasts thirteen months and the calf nurses for approximately two years. Since a calf is so depend on its mother for its first few years of life, a female only has a few offspring during her lifetime. Dugongs, commonly called the sea cow, is entirely dependent on sea grass for survival so they spend their entire lives in shallow coastal waters. Due to the slow reproductive rate and other threats to their population including: boating accidents, by-catch, pollution, habitat degradation, and loss of a steady food source they are declining fast.



*Dugong*



In recent years these hunting practices have been jeopardized as environmental threats have increased which has led to greater hunting restrictions put into place by the Australian Government. Prior to being able to comprehend the effects of these two variables on the traditional cultural practices of the Torres Strait Islanders, one must understand how current environmental threats are affecting marine species populations, as well as be knowledgeable of Australian co-management policies for protecting the seven species of sea turtles and dugongs. Co-management is the joint management of a region or species between an indigenous population and a federal government. This paper will attempt to examine and theorize how the traditional hunting practices of the Torres Strait Islanders have been impacted by the hunting restrictions and co-management system in place. It will explore if Australian marine species conservation policies, which typically focus on absolute preservation, allow for these indigenous people to continue practicing their cultural traditions and subsistence patterns.

In particular, the focus of this paper is to answer how the Torres Strait Islander's traditional hunting practices are affected by the current rate of decline in dugong and sea turtle populations and the Australian Government's co-management policies on marine preservation. My hypothesis is there will be significant disruption to the Torres Strait Islanders hunting practices due to the decline of the dugong and sea turtle populations. This in turn has led to an increase in conservation policies and stringent hunting laws being implemented by the Australian Government to protect these marine species. This study is limited because I was unable to go to the area myself to interview the people and study the species populations myself. I am dependent upon peer reviewed works done by others in the field of academia to draw my analysis and conclusions from. The population numbers for sea turtles and dugongs are only estimates since there is no method for accurate population numbers. There has not been a study done before that

takes a more holistic approach towards what is impacting the Torres Strait Islander's hunting practices.

Overall it is important to study the impacts environmental degradation and governmental regulations have on indigenous populations' traditional cultural practices. It varies from country to country; some systems in place allow cultures to continue while others inhibit their practices. Unless there is a mutual understanding between the government and the indigenous populations the cultural survival of many are at risk. An active interaction with traditional places and practices helps to maintain cultural associations within a person. While it would be impossible to study all cultures in this situation, the terms of this paper will focus specially on the issues confronting the Torres Strait Islanders and how their traditional hunting practices are being affected by external forces. The Australian Government states, "It is imperative that Torres Strait Islander People are engaged in management of their marine estates and natural resources in order to continue the evolution of their culture and connection to country for future generations," (Australian Government, 2006). This paper will show if the Australian Government's position on traditional hunting rights are being upheld and if not, why that is. As well as how environmental degradation is playing a role in the Australian governments decisions. The study of these interacting variables could provide vital information on the realistic challenges facing the Torres Strait Islanders and the preservation of their culture.

## **Methods and Materials:**

In order to answer my question, “How are the Torres Strait Islander's traditional hunting practices affected by the current rate of decline in dugong and sea turtle populations and the Australian Government's co-management policies on marine preservation?” I had to extensively research five subjects in order to draw a conclusion. I had to conduct an extensive literature review of existing works and data. I needed to understand postcolonial theory in general and how it had affected the Torres Strait Islanders. I had to research co-management policies in Australia and the specific ones being used to monitor traditional hunting practices. I needed to understand the hunting practices, the significance of these practices and the restrictions in place. I researched how the Torres Strait Islanders felt about the co-management policies, if they felt they were helping to continue cultural practices and maintain their culture. I also needed to review the Australian government’s position on traditional hunting and why they hold this position. Finally I had to look into the populations of sea turtles and dugongs and if they were declining in numbers what was the cause. Due to the vast amount of information available on the various subjects I was researching I had to set up criteria to reduce the amount of sources.

By setting up criteria for what sources I considered valid I was able to prevent wasting my time on sources that were not significant to my study. The first criterion was that the article or information was peer reviewed or support by academics. The material had to be from reputable sources such as the Australian government. If the paper included an experiment and was used to draw conclusions from them, the methods had to be included in order to provide validity. If the article referenced another experiment I would then double check the source of the experiment to make sure it included the methods. I limited myself to information written within the past fifteen years, 1995-2010. However there were a few exceptions to this rule, it was

subjective. If there was a particular book or article that was cited in multiple sources due to its importance and it was relevant to research then I would include it. Such as in the case of Jeremy Beckett's ethnography *Torres Strait Islanders: Customs and Colonialism* which was first published in 1987 but is still a landmark piece on Torres Strait Islanders customs and cultural practices. By allowing my time criteria to be flexible I prevented valuable sources from not being used. When I was researching population information on sea turtles and dugongs I had to have a much more stringent time line in order for my conclusions to be valid. Only the most recent analyzed data was included. While there is ongoing monitoring of the species populations currently all of the papers that analyze the populations are based off of the 1990-1999 data. I located all of my sources through the University of Nebraska library and databases, internet resources and recommendations from my advisor and reader.

While I could not conduct my own research on site in the Torres Strait Islands I did spend six months abroad studying at the University of Wollongong in Australia. While I was at school in Wollongong I took classes on Australian Aboriginal history, cultural practices and their connection to the land. This education and experience provided me with an insight into the Torres Strait Islanders and the issues affecting them today. It also gave me a good understanding of where I could locate the research needed. It allowed me to understand the current social and political attitudes of Australia. The personal background on the history of Australia, the Torres Strait Islanders and cultural tension proved to be invaluable in my interest and research of the topic.

Through the collection of other peoples' data and information I was able to triangulate the three main topics and draw conclusions that would answer my question. I focused specifically on the dugong and sea turtle population declines, how this caused the Australian

government to control traditional hunting practices, to what extent and finally to what degree this affected the traditional hunting practices of the Torres Strait Islanders. By understanding the population declines as well as the political and cultural tension I could compare the subjects at length and get the results I need to answer my question.

## **Literature Review:**

“I am all I see-all I see is me”

-Tjilpi Bob Randall 2001

Understanding an indigenous groups' connection to the land, sea, and animals can be extremely difficult for many people, especially Westerners who have been influenced by European thought and history. Utilizing a postcolonial theoretical approach allows researchers and others to unpack a more accurate analysis of non-Western thought and practice in relation to resource management. The theory of postcolonialism is the concept that the colonial mindset is still present today in society, though it might not always be obvious. The theory applies mainly to countries that were colonized by European countries, i.e. England, France, and Spain. Countries throughout the world were colonized for various reasons, including but not limited to trade routes, land use and resources. Colonizers defended their actions by expressing the divine need to spread their faith and noble action of civilizing the natives. Both academic and political history hold that“... colonizers are depicted as the advanced civilization, while the colonized are depicted as backward nations,” (Weenie, 2000). The efforts to ‘civilize’ were commonly referred to as the “white man’s burden” in England. This expressed as the need to take care of indigenous populations because they are unable to fully and efficiently utilize the land and other resources available to them. This racism resulted in the creation of a social hierarchy headed by majority and delimiting all others. During colonial time periods many indigenous populations were uprooted from their traditional lands, reduced in populations and faced other forms of extreme racism. “Postcolonialism was traditionally seen as a period of history initializing the ‘handing over’ of colonized states by what were classified as supreme powers to rulers born and bred in the colonies themselves”, (Kumar, 2000). While countries gained independence from their

European counterparts there was and still is underlying colonial ideology in the way these ruling classes or authorities run their countries and treat indigenous groups living in those lands.

Indigenous populations continue to be voiceless in today's society, due to the effects of colonialism. As such, Western forms of resource management remain dominant and limited in their adaptations or understanding of non-Western methods and practices.

Postcolonial researchers work to identify and address remaining hegemonic concepts and practices that could be affecting indigenous populations. "Naming and defining the problem is the first step toward postcolonial recovering and healing", (Weenie, 2000). One of the concepts is known as *Terra Nullis* and centers on the idea that land and other forms of natural resources are there to be controlled and conquered (Banner, 2005). This primarily Western ideal suggests that land must be 'developed' or is otherwise wasted space, especially in the case of prime agricultural land. For indigenous groups, like the Torres Strait Islanders, non-Western considerations of land go beyond physical utility. Land and other non-human resource are the source for the origin stories (commonly known as 'creation myths') ancestral meeting, hunting, gathering, or ceremonial ground, and a source of spiritual connection (Australian Indigenous cultural heritage, 2008). For the Torres Strait Islanders the land and sea are each an integral part of socio-cultural historic and contemporary practice. There is a socially, politically, and cultural pressing need to address the remnants of the colonial mindset in much of postcolonial society in order to arrive at a mutual respect for differing ideological approaches between indigenous and Western populations.

A common Western belief is that land and nature is there to be controlled and conquered. Land needs to be 'developed' otherwise it is wasted space, especially in the case of prime agricultural land. "Resisting colonialism entails a reasoned and critical analysis of the systematic

and systemic practices that exclude certain groups from full and equal participation in mainstream society,” (Weenie, 2000). In postcolonial societies racist ideals are still present creating a built in equality that prevents indigenous groups from gaining political and social equality. As in the case of *Terra Nullius* the English colonizers of Australia declared the land empty and did not consider the indigenous populations as fully humans. This mindset is still present today in the white population of Australia thus meaning it is extremely important to recognize these ideals still present to reduce postcolonial racist ideals. Without addressing the affects of colonialism there is a pattern of loss among many cultures regarding a traditional socio-cultural and spiritual connection to homelands. By studying post-colonial affects researchers, politicians, and other practitioners may combat the negative results of clashing divergent ideals.

In 1770 when James Cook “discovered” Australia he did meet the local Aboriginal peoples, however he did not view them as owners of the land and described the land as empty or, *terra nullius*. *Terra nullius* means no man’s land or unoccupied and the ideology surrounding this declaration had far reaching implications. In 1835 Governor Bourke of Australia executed the Doctrine of *Terra Nullius*, which stated that indigenous Australians could not own, sell or acquire land unless it was given by the crown. In some cases the land given to aboriginal people was for missions to be built so missionaries could control and monitor the aboriginal people. The idea of *terra nullius* was Britain’s main argument for settling Australia and the treatment of the indigenous population. Mabo versus Queensland No 2, commonly referred to as the Mabo trial, in 1992 provided a milestone decision that recognized the indigenous rights to Australia for the first time. The case was brought to the Australian High Court in 1982 by Eddie Mabo of the Meriam People in the Torres Strait Islands; he wanted this people to gain rights to their islands in



the Torres Strait. The plaintiff argued the Meriam people never gave up their rights to the land and still had a valid claim to them. Queensland argued the islands had been annexed by the crown therefore the rights and claims of the Meriam people to the islands no longer existed. The court rejected Queensland claim and the Doctrine of *Terra Nullius*, granting land rights not only to the Meriam people but also to all Aboriginal people and Torres Strait Islanders. The High Court decision ruled that native title to land and resources are recognizable in Australia, thus the indigenous people of Australia do have rights to their land. “Native title is the recognition by Australian law that some Indigenous people have rights and interests to their land that come from their tradition laws and customs”, (*Exactly What is Native Title*, 2010). Native title rights and interests include many aspects such as the right to live in an area, access to an area for traditional purposes, visiting sacred sites, hunting, gathering and fishing as well as using the land to teach the younger generation. The Mabo trial resulted in the formation of the Native Title Act of 1993, which defined and clarified the definition of native title and rights as seen below.

(1) The expression *native title* or *native title rights and interests* means the communal, group or individual rights and interests of Aboriginal peoples or Torres Strait Islanders in relation to land or waters, where:

- a) the rights and interests are possessed under the traditional laws acknowledged, and the traditional customs observed, by the Aboriginal peoples or Torres Strait Islanders; and
- b) the Aboriginal peoples or Torres Strait Islanders, by those laws and customs, have a connection with the land or waters; and
- c) the rights and interests are recognized by the common law of Australia. (*Exactly What is Native Title*, 2010).

While native title was recognized, the government still held the right to exercise discretion when granting rights. Every group needed to prove a traditional connection or ownership of the land. As long as the government had not extinguished aboriginal rights to the

land through other acts or laws then indigenous groups had a valid claim to it. The claims process is still a difficult and complicated issue that affects the indigenous population of Australia today. It can take years in court for a decision to be made. This is closely correlated with the presence of the colonial mindset of today. The person or group has to provide proof they were on that land before the region was colonized this can be extremely difficult since there is little to no written documentation about this by the English since they did not consider them people or owners. They must prove an ongoing connection to the land, this can prove to being a time consuming process (*Three approaches to Negotiating Native Title, 2008*). Proving an ongoing connection is hard when many of the people were removed from the region or the region has been developed thus voiding native title claims. After a connection has been proved if the area has been developed these owners must give up their rights to the land in order for it to be transferred back to the aboriginal people. It can be difficult to grant rights to indigenous lands if they have been used for development or “owned” by another person. It can be hard to convince a farmer that his land belongs to someone else when he depends on it for his livelihood. In some cases the land or sacred site has already been destroyed by development from previous generations, thus resulting in the group losing a part of their culture.

Neither the Native Title Act nor the Mabo trial defined the native title to sea rights. For the Torres Strait Islanders the sea is just as important to them as any land. This issue has caused struggles for the Torres Strait Islanders who view parts of the Great Barrier Reef as part of their traditional lands. Sea laws and rights are much more complicated because the state control is limited to three miles out to sea. Traditionally, an individual male in the group ‘owned’ their own section of the reef, it was passed down from father to son. For generations the knowledge of that particular reef and hunting grounds was passed down, the resources of the reef were used to

sustain the man's family. If someone was lucky enough to catch a sea turtle or dugong on their reef it would be shared amongst the community. "Dugong hunting is a traditional rite of passage for men, and successful hunters are highly regarded in their communities", (Havemann, 2007). Traditional hunting is defined by the Australian Government as resources consumed by the person, used for or during traditional activities but cannot be sold (Fitzpatrick, 2001). It is important to define traditional hunting in order to prevent poaching, the over hunting of species, illegal trading between indigenous groups, and it being sold on the black market. Hunting is culturally significant to the people of the Torres Strait Islands and if the hunting is only done for traditional reasons then it falls well within this definition.

There are many outside pressures affecting dugong and turtle populations such as pollution, loss of habitat, by catch and more. These pressures translate to smaller populations of the species to traditionally hunt. The number of turtles and dugongs allowed to be hunted lessens each year, otherwise the populations will drop to dangerous levels. "Population levels of dugong and marine turtles may continue to experience a long slow decline due in part to unsustainable hunting practices", (Havemann, 2007). Since these species are considered threatened or endangered they are monitored closely to watch population levels. The Australian government recognizes the cultural value of traditional hunting practices. Similarly the Torres Strait Islanders recognize the need to preserve these populations and are willing to work with the Australian Government in order to come to practical regulations to regulate traditional hunting until the populations can repopulate. Torres Strait Islanders want to maintain a healthy population of turtles and dugongs in order to continue a very important cultural practice, hunting. The constant adjustments of the number allowed to be hunted from year to year depending on the populations of these species often results in some years the Torres Strait Islanders will be able to hunt more

and other years they may need to suspend hunting practices while the population recovers. “Any genuine measure to prevent dugong and turtle over-exploitation *will* affect traditional fishing”, (Havemann, 2007). As long as the Australian government and the Torres Strait Islanders are working together on hunting regulations then there is less likely to be a conflict over traditional hunting practices than if they were not. In order to counteract some of the tension between the Torres Strait Islanders and the Australian government they have turned to co-management as a solution.

Co-management of a location and species helps to mediate possible conflicts between the two groups. “The tensions between indigenous peoples and modern nation states over control of and access to land and natural resources are frequent, intractable, and fiercely contested”, (Lane, 2005). By co-managing a place in theory both groups can achieve their goals and come to an agreement over how the space will be used. This practice is a way of managing the effects of colonialism remaining in society. Providing a setting for the indigenous population to have a voice. Co-management of the Torres Strait Islands allowed the Torres Strait Islanders to be part of the decision making process which affects their way of life. “At the heart of community based management is the principle that those people affected by decisions should participate directly in the decision making process”, (Havemann, Smith, 2007). It can be extremely difficult to create co-management policies when the species are consistently in the public eye, such as in the case of the Torres Strait Islanders. It can be difficult for some Westerners to understand the traditional hunting practices such as the killing of a dugong or a turtle. These majestic animals are viewed differently since they are endangered or threatened, so in many Westerners minds the government should put a stop to all indigenous hunting of these species. This ethnocentric view prevents many Westerners from seeing the significance these species have to the Torres Strait

Islanders. It prevents them from seeing that the Torres Strait Islanders have a vested interest in preventing the extinction of these species, they want to preserve them for future generations. The Australian government monitors the populations and the traditional hunting very closely in order to prevent unsustainable practices from occurring. “Australian law is very supportive of traditional fishing rights but also requires that dugongs and turtles do not decline in numbers”, (Havemann, Smith, 2007). Some of the Torres Strait Islander groups have given up hunting these species of their own accord in order to let the populations increase in numbers. Elders within the community are very proactive in monitoring the populations levels themselves and watching young hunters so they do not over-hunt. Both the Australian government and the Torres Strait Islanders want to preserve these species and neither group wants to do so at the cost of cultural practices. This is why they choose co-management as a tool to create policies that please both groups and help to preserve a culture that has been thoroughly affected by colonialism.

At this time the Australian government and the Torres Strait Islanders are in a constant cycle of adjusting hunting regulations, they have to adjust as the populations of the species fluctuate. If the population increases more hunting permits can be given and in the event population decreases permits are restricted and hunting practices are reexamined. Without equal support from both sides to work towards preserving dugongs and turtles the co-management policies would fail. The Torres Strait Islanders work closely with the Australian government to monitor the species and to record hunting practices.

“By adopting a sustainable use approach, Torres Strait Islanders can be in the forefront of maintaining their traditions, and at the same time ensure future generations can participate in the same traditions Torres Strait Islanders enjoy today”, (Havemann, 2007).

Without the tool of co-management it is possible the Torres Strait Islanders would not be able to hunt dugongs and turtles because they would not have a voice in what regulations are created. It is extremely important for indigenous groups to have a voice in decisions that will affect their livelihoods and cultural practices; this is being done through the policy of co-management. It is not a perfect system, sometimes cultural practices are significantly affected by decisions made but it provides a structure for the two groups to work together. In the case of the Australian Government and the Torres Strait Islanders co-management is helping the two groups preserve both cultural practices as well as dugong and sea turtle populations for future generations.

## **Results/Discussion:**

This section will identify how decline in the marine species population and related Australian laws have changed the Torres Strait Islanders hunting practices. The results will be discussed in a three tiered approach beginning with a brief exploration of the dugong and sea turtle populations and what is affecting them. The second component of this research will look at the traditional hunting practices and the cultural relevance of them. The final component will look at the co-management policies that are in place to see how it is affecting the hunting practices. Over several recent generations, Torres Strait Islanders have progressively changed their hunting practices largely due to the fluctuations in species populations, colonialism, new food sources and federal laws. Hunting and gathering of marine resources has been and remains the primary source of subsistence of the Torres Strait Islanders and as seafood is the high percentage of their diet. During colonial periods, hunting and gathering practices were restricted by the missionaries on the island. The English colonizers hoped to “teach” the Aboriginal people to leave their traditional culture and practices and hoe to live sedentary lives through farming and conquering the land around them. It is only in the past few decades that these restrictions have been lifted, allowing for the Torres Strait Islanders to practice their culture once again. The Mabo trial generated a revival to return to traditional practices to revitalize the culture. This effort to bring traditional culture and practices back for future generations, was the initial step in lifting the restrictions of colonialism. Elders and community leaders among the Torres Strait Islanders have been working with the Australian Government and the local communities to teach the younger generation about dugongs, sea turtles and traditional hunting practices in hopes to preserve traditional practices.

Sea turtles and dugongs are creatures often associated with the Torres Strait Islands and the Great Barrier Reef through images, video, papers and more. These marine species are either listed as threatened or endangered by the IUCN Red List of Threatened Species; in many cases it is illegal to hunt these species throughout the world due to their low populations. “Only in the Torres Strait are dugongs and turtles considered a fisheries issue throughout the rest of Australia they are protected by State and Commonwealth conservation laws,”(Havemann and Smith, 2007). One factor that affects dugongs and sea turtles populations is their low reproductive rates; females are not able to reproduce each year, which can make it hard for the populations to rebound after their populations drop. An additional complication is that a species population level is measured by the number of adults present in the population. Interestingly, while there is a global decline of both species, the Torres Strait Islands have the highest population of dugongs anywhere in the world, and six out the seven species of sea turtles in the world nest in the Torres Strait Islands while all seven live in the region. Compared to the rest of the world, these species are populous in the region yet their numbers are still declining. These studies are an important measure of the population due to the populous numbers of these species in this region. Long term studies are conducted due to the long lifespan and low reproductive rates of the species. Most female sea turtles return to the beach they were born at to nest so they are easily tracked and monitored for population measurements. Dugongs, on the other hand, can take two and half years to seven years between each calf; such long gaps between each calf make it harder to estimate population growth (Dobbs, 2004).. “The long lifespan of marine turtles means that even the long term studies do not cover a single generation, so that the impacts of current pressures may not become evident for decades,” (Great Barrier Marine Park Authority,2003). Population models have to review breeding rates, average age of the current populations, non-



breeding periods, and over population numbers to determine if a species is declining or not. Population models from 1990-2000 show the dugong and sea turtle populations have been steadily declining. The long term impact that records declines have on these species has not been determined. Until the data from 2000-2010 has been fully analyzed scientists are unable to determine if the population is currently declining, stabilizing or growing.

Seagrass is the main food source of dugongs and sea turtles as well as many other marine species. Seagrasses are a group of flowering plants that grow around coral reefs and estuaries; they can only grow in shallow water approximately ten meters deep. They need to grow in clear water to allow for photosynthesis and thus sensitive to changes in their environment including sediment overload, flooding, cyclones, runoff, dredging, and trawling,” (Chin, 2005). All of these threats are present along the northern coast of Australia and the Torres Strait. These threats can decimate large fields in a short amount of time placing extreme pressures on the herbivores that depend on the grasses. There have been many studies completed by Queensland Parks and Wildlife Services and others that show a correlation between the health of sea grass fields and the populations of the dugong and sea turtles. It is possible that environmental pressures and current climate change are to blame for the declines. It is probable that the populations naturally fluctuate overtime though researchers are unable to determine this as the species have only been monitored since the 1970s. While correlations can be seen it is difficult for scientists to pinpoint the exact reason why these populations are currently declining. Current evidence suggests that the decline in seagrass fields which is the main cause n the overall decline of dugong and sea turtle populations likely is caused by anthropogenic events.

There are many reasons why traditional hunting is extremely important to the cultural survival of the Torres Strait Islanders including ceremonies, reciprocity and prestige. One

example of these is the ceremony surrounding tombstones openings. These elaborate ceremonies that are performed at least a year after the death to honor the family member. At tombstone opening ceremonies turtle eggs and dugong meat are traditional meals served.

“Earlier rituals involving ancestor worship have been modified and today are part of the elaborate celebrations that take place at least one year after the death of a relative. Family members spend large sums of money to purchase an intricately decorated headstone ceremoniously unveiled at the grave side and to entertain the many guests,”(Fitzpatrick, 2001).

Many families still practice communal trading of turtle and dugong meat as part of the tombstone opening ceremonies. The head male of the family is the one who goes to retrieve the turtle or the dugong from the family reef following traditional hunting practices(Becket, 1987). For example it is cultural law that the species must die in the water and not on the boat or land. The Torres Strait Islanders believe that if the species dies in the water it will be born again in the water providing future species on the reefs. If the hunter does not follow this method, however the tradition suggests that the offending family will have bad luck in future efforts to hunt on the reef. The meat is brought back to the island where it is divided up and passed on to different family members. The closer an individual is to the male who caught the species, either through consanguine or affinal relationship, they will receive more meat or richer meat.

“ Significantly, communal sharing of the prestigious dugong and turtle has become constrained because of the availability of freezers, residence of hunters not socially connected in the community, and the competition with commercial fishing activities for hunting time,”(Fitzpatrick, 2001).

The tombstone opening ceremony is a way for men to gain prestige through hunting and for the community to practice their traditional reciprocity system. This practice has become more difficult in the modern world because of the restrictions and declines on populations. Many

family members who live on the main land will travel to the island in order to participate in the ceremony. At the tombstone opening there are extravagant feasts, dancing, storytelling and family reunions. By having the traditional meal of turtle eggs and meat the Torres Strait Islanders are able to continue some cultural practices in a very modern world.

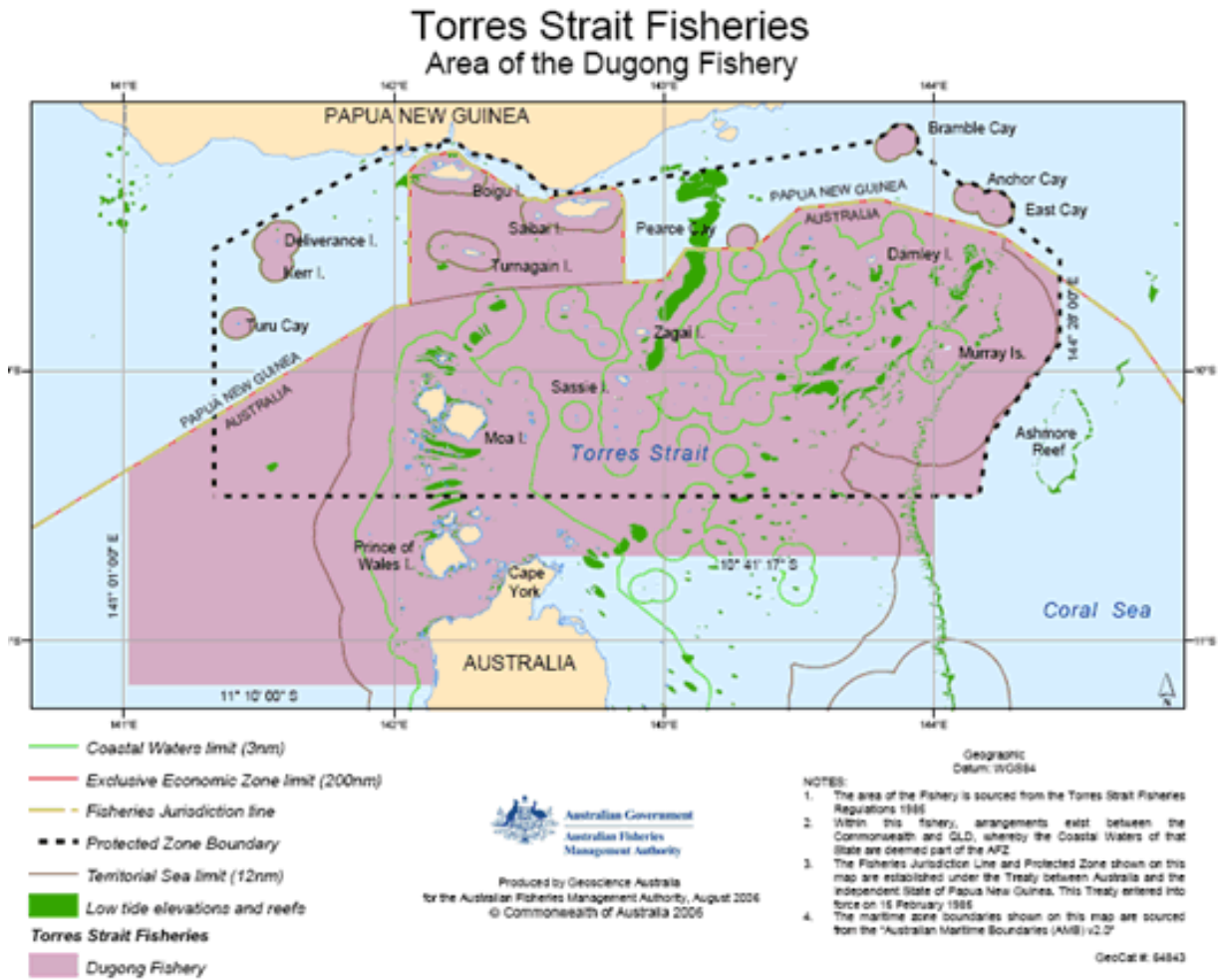
Reef rights and knowledge of the reefs are passed down from uncle to nephew and aunt to niece, however recently it has changed from father to son and mother to daughter. This change has occurred in the traditional passing of knowledge because more and more people have been leaving the islands so the extended family networks are not there anymore. The knowledge passed down from older generations to younger generations is specific to a family “owned” reef. The knowledge is passed from generation to generation through storytelling and educational trips to the reef. “These areas are generally acknowledged as belonging to specified individual groups and people know exactly where certain species are located at specific time of the year, moon cycle, and tidal sequence,”(Fitzpatrick, 2001). Through this knowledge many elders have identified out how the reefs have changed over time and noticed the declines in dugong and turtle populations long before researchers did. Consequently, there are conservation practices built in to traditional practices. For example, it is considered unacceptable to fish on another man’s reef unless previous permission is given or if the men are fishing together. Women take out young girls to teach them how to gather turtle eggs, locations where turtles nest, and other resources on shore or in the low tidal zones (Fitzpatrick, 2001). Cultural laws prevent young women from casting lines on the beach in front of the community, especially males. Young females can only fish when they are with older siblings or women in their family. Boys ideally take their first hunting expedition around the age of thirteen or fourteen years to begin learning about their family’s reef and the available resources. It takes years for a boy to fully learn about his family’s

reef and its resources. During these hunting trips that boys become men in the eyes of the community and gain prestige through the animals they catch, the care of these animals, and how many they catch. During this time that a boy proves to the community that he is able to provide for his future family. Since a man “owns” his reef he takes measures to care for and protect the reef for his future children and future generations. Torres Strait Islanders believe that if a man over fishes his given reef there will be no way for that reef to recover and consequently no resources for him or his family. By knowing what species are available on their reef and when these species breed the Torres Strait Islanders monitor the populations and adjust their hunting practices. “Many Torres Strait elders feel there are fewer dugongs and turtles in the Strait now than there was a few decades ago,” (Havemann and Smith, 2007). Some elders believe young hunters do not truly understand the cultural significance of these hunting practices and the need for restrictive hunting. Elders and community leaders today spend a significant amount of time working in the community to educate the people especially the males about voluntarily restricting their own hunting until the populations recover. This is particularly problematic considering the international boundaries covering this fishing zone.

The Torres Strait Protected Zone is a restricted fishing zone which is jointly managed by the Torres Strait Islands and Papua New Guinea. There is a council of members from both countries that monitor the populations of the fish and mammals in the region. Based on these population numbers the council sets up a specific number of permits based on these numbers and recommendations from the Australian Government. Commercial finishing is restricted within this zone compared to other coastal regions around Australia. Traditional hunting is allowed in this zone as long as the hunter has a permit; both the Torres Strait Islanders and the Papua New Guineans have the right to hunt in these areas. Traditional hunters are the only fishermen who

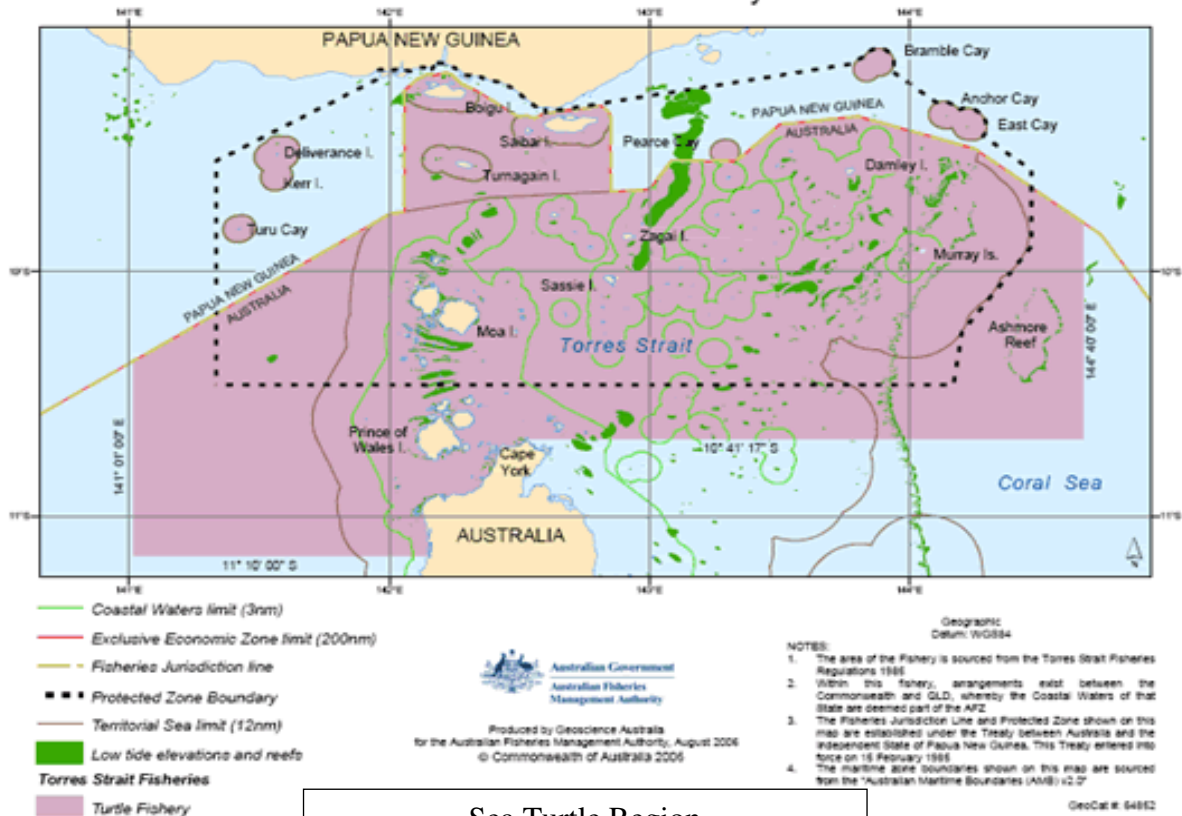
are allowed to hunt for turtles and dugongs as no commercial fisherman can hunt them. Torres Strait Islanders cannot sell or trade the turtle and dugong meat as it is restricted to only personal consumption. This restriction does not apply to the Papua New Guineans and at times the meat does make it to commercial markets. The Papua New Guinean government does not restrict traditional hunting practices even though Australia does. The council also monitors the trade goods between the Torres Strait Islanders and the Papua New Guineans in order to prevent the spread of diseases between the two regions and prevent illegal trading of turtle and dugong meat. The Torres Strait Islanders are granted a specific amount of permits a year to hunt the species but the restrictions are not as stringent for the Papua New Guineans. Some years it is believed the Papua New Guineans overhunt the species which in turn places even more restrictions on the Torres Strait Islanders even though they are not participating in the offense. "In many other countries around the world research into hunting of endangered and vulnerable wildlife for subsistence needs has found that hunting is sustainable if it is heavily regulated low-level hunting,"(Havemann and Smith, 2007). Sustainable hunting means the population of the species never declines below a level to be considered threatened, endangered or extinct. While other food stuffs have become easily available for indigenous groups it does not contain the cultural significance as hunting does. The Torres Strait Protected Zone and Authority work with the indigenous populations in the region so cultural practices can continue in the hope of these cultures continue into the future.

The figures below show the boundaries of the Torres Strait Protected Zone regions in which traditional hunting can be done.



Dugong Fishing Region

## Torres Strait Fisheries Area of the Turtle Fishery



### Sea Turtle Region

Both the Torres Strait Islanders and the Australian Government have a vested interest in protecting these species for future generations. In order to do this without completely restricting cultural practices the government has chosen co-management to manage the resources available in the Torres Strait. “ The essence of the community-based model of land management is (1) government decentralization, (2) devolution to local communities of responsibility for natural resources, and (3) community participation,” (Lane, 2003). The idea of co-management is for the government and the indigenous populations to work together towards a common goal without threatening the cultural survival of the community. There is no such thing as a perfect cookie-cutter conservation policy that could work for any situation between an indigenous group and

state governments as the policy would necessitate changes based on the diverse needs and goals of the varied situations. Co-management, however, allows previously or otherwise marginalized indigenous population to play a pivotal role in the decision making process. Within the Australian context, the state government requires conservation but desires indigenous recognition and cooperation. “Australian law is very supportive of traditional fishing rights but also requires that dugongs and turtles do not decline in numbers,”(Havemann and Smith, 2007). The Australian position on this situation is similar to that of the Torres Strait Islanders allowing these two groups to come to an agreement which employs a restrictive hunting permit system. The Torres Strait Island Authority, a division of the Australian Government, looks at the species populations numbers from the previous years and allocates permits based on those numbers. The population numbers each year is based on researcher field observations, number of species found dead, number hunted, and observations of the Torres Strait Islands (Havemann and Smith, 2007). This system allows for the traditional hunting of the dugongs and sea turtles to occur without the possibility of overhunting, and hopefully protecting the species and maintaining the cultural integrity of the Torres Strait Islanders. This co-management policy while stringent provides both the government and the Torres Strait Islanders with a way to achieve their goal, protect the species from further decline without the total disruption of cultural practices. Every year the number of permits varies based on the reported size of the various populations. But given the delicate situation between the Torres Strait Islanders and the Australian government co-management of these resources appears to be the best available solution. While this policy of hunting permits is currently working it is only temporary. If populations decline further then it is probable traditional hunting will have to stop however if populations increase then the



restrictions may be lifted. What the future holds is unknown but at the moment both groups are working to preserve dugongs and sea turtles.

## **Conclusion:**

In conclusion the traditional hunting practices of the Torres Strait Islanders have changed significantly but not entirely against their will. The Torres Strait Islanders have worked with the Australian Government to maintain dugong and sea turtle populations through co-management policies and related practices. The traditional hunting practices of the Torres Strait Islanders are not just about gathering resources for the community. These practices are a matter of prestige, the continuation of reciprocity systems and are an educational tool for passing down traditional knowledge. It is imperative that the Torres Strait Islanders continue traditional methods of hunting in the hopes that these customs are retained for future generations. The co-management policy in place is a hunting permit allocation system which allows the Torres Strait Islanders to continue hunting and while also protecting dugongs and sea turtles. Though this co-management policy is working for the current situation it remains subject to regular adjustment has as the populations fluctuate, it is likely in the future the groups will have to create a new policy. Additional studies must be completed to understand the extent that restrictions are affecting the transfer of cultural knowledge among Torres Strait Islanders and to see if the existing hunting restrictions are preventing the further decline of dugongs and sea turtles.

The Torres Strait Islanders appear to be content with the current cooperative agreement as it allows for the continuation of their traditional customs while preserving the species populations. Some groups of the Torres Strait Islanders have decided to cease hunting these species until the populations increase to healthy levels again. While the hunting practices of the Torres Strait Islanders are restricted, the hunting practices of their Papua New Guineans neighbors. This remains a frustrating component of an arrangement with an overlap of international boundaries. Restrictions on hunting have resulted in fewer turtles and dugongs

being brought into the community thus when one is brought in the elders take the opportunity to teach the children about the species and related customary laws. In support of this practice, the government has provided the Torres Strait Islanders with grants to create educational brochures, books and presentations so the community members are able to continue to pass down this knowledge while hunting restrictions are in place. With the aim of protecting the sea turtle and dugong species any policy would result in a restriction of hunting practices. In this case, co-management offered the Torres Strait Islanders an opportunity to work with the government to come to an acceptable agreement for both groups.

Worldwide there are indigenous groups and federal governments that are at odds because they are unable to come to an agreement over traditional lands, indigenous rights and resource rights. In order to diminish this hostility, colonial governments must recognize indigenous populations as a source of knowledge when determining land and resource related practices and policies. “Indigenous peoples’ knowledge, conservation beliefs and values, environmentally adaptive and sensitive land use, resource management practices and determined defense of territory and natural resources have enabled many of them to inhabit their homelands for centuries without devastating their ecosystems and biodiversity”, ( Stevens, 1997). Though there is not one policy that is able to work for all situations state governments around the world might choose to look at those that are seeing positive results for ideas to adapt to their own situation. Government officials should also consider the inclusion and rights of local indigenous groups who are knowledgeable and as such vital members in the decision making process. The agreement between the Torres Strait Islanders and the Australian Government is a case where co-management appears to work and offers the example of a management policy that also supports local culture and traditions.

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