

Moz Turtles: Searching for practical solutions to sea turtle poaching in Mozambique

Jess Williams is a PhD candidate with James Cook University, Australia and lead scientist for the Sea Turtle Research program at Marine Megafauna Foundation; a small group of highly dedicated, productive and passionate researchers committed to preserving Mozambique's marine life. Here Jess provides insight into a devastating and hugely destructive fishing practice – sea turtle poaching.



Clutch of hawksbill turtles ready to run to the ocean

Conservation – Mozambique's turtle poaching





Spear fisher with mature loggerhead at Tofo



Conservation – Mozambique’s turtle poaching

In some parts of the world sea turtles are treated as valuable economic assets, generating thousands of dollars/rands annually through ecotourism. Sadly this is not the case along the Mozambican coast, where sea turtles are valued at little less than 30 Mozambican meticals per kilo of flesh (<\$1 US) and their carapaces (shells) are discarded, relics of a once magnificent creature left to slowly decompose in the sand dunes.

Mozambique has approximately 2600km of coastline, with fisheries and maritime enforcement offices present only within cities and easily accessible coastal towns. Only one fisheries patrol boat is available to patrol this vast coastline for illegal fishing activities, and the vessel is usually docked in Maputo Harbor, mechanically unsuitable for patrolling. These factors make it particularly difficult for the country to enforce laws created over 65 years ago to protect sea turtles, both in the water and when the turtles are visiting their ever-decreasing number of nesting beaches.

In the south of the country, along the stretches of coast protected by the ‘Ponta Do Ouro Partial Marine Reserve’, nesting turtles including loggerhead (*Caretta caretta*) and a few leatherbacks (*Dermochelys coriacea*) are assured of some level of protection. This partial marine reserve has a continuous monitoring effort during the nesting season, whereby over 40 people are employed to patrol the 85km of nesting beach from dusk to dawn. The increased profile of patrolling along this coast and the high interest invested by the tourism industry has effectively deterred poachers from taking nesting turtles. However, these 86km represent the only place with consistent beach patrols along Mozambique’s entire coastline.

Elsewhere, poaching is widespread – and goes unreported. The turtles are killed for meat or money depending on the motives of the individual poacher. If the opportunity presents itself, the eggs are also collected within a few hours of the nest being laid. The eggs are eaten, bartered or sold as an opportunistic source of protein; a free subsistence resource for extremely impoverished people.

Although turtles are true marine reptiles, the females still need to come ashore to lay their eggs every few years, usually within four hours of high tide so they minimize the distance they have to crawl. The female turtles need around an hour on the beach to complete the nesting process. First, she must select a suitable nest site for excavation and each female is usually quite particular about the exact location she will lay her eggs. This ‘fussiness’ is one of the few ways she can demonstrate any maternal care for her offspring, so it’s a motherly rather than quirky mannerism.

More evidence of poaching, Jess with fisher’s wetsuits and turtle bones



Once she has laid her eggs, and re-buried them, she digs a secondary body pit to disguise the original nest location from predators and to protect her hundred or so offspring. However, during this short time on the beach, she is extremely vulnerable to poachers. Although nesting females can move faster than most people think, they cannot match the speed of a motivated hunter. Out of water their body weight is over 70kg. If poachers flip the turtle upside down, as they often do, then the animal is completely helpless to escape.

Sea turtles are not a great source of meat, as most of their body mass inside their shells is internal organs rather than muscle, their sheer size makes them an attractive target for poachers. Although turtles, particularly green turtles (*Chelonia mydas*), are considered a delicacy in some parts of the world, in Mozambique they are just an alternative food source or protein staple

Inside a spear fisher’s temporary camp





Nesting Hawksbill turtle

in an otherwise lacking diet. They are a risky meal: there are numerous documented cases from around the world in which the consumption of sea turtle meat at ceremonies and festivals has resulted in mass food poisoning outbreaks and multiple deaths. This condition is referred to as chelonitoxism, usually caused by a combination of biotoxins, environmental contaminants, parasites, bacteria and dubious transportation and storage processes from shipping meat around on the black market.

Inhambane province, in southern Mozambique, is famed for its long, beautiful, isolated beaches. Where once these were prime nesting habitats for sea turtles, this area is now thought to have the highest rate of poaching in the country. Rufford Small Grants for Nature Conservation has been supporting our ongoing work at the marine Megafauna Foundation, which focuses on documenting the rates of poaching at key areas along Inhambane's coast, and understanding how and why this



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Poached carapace

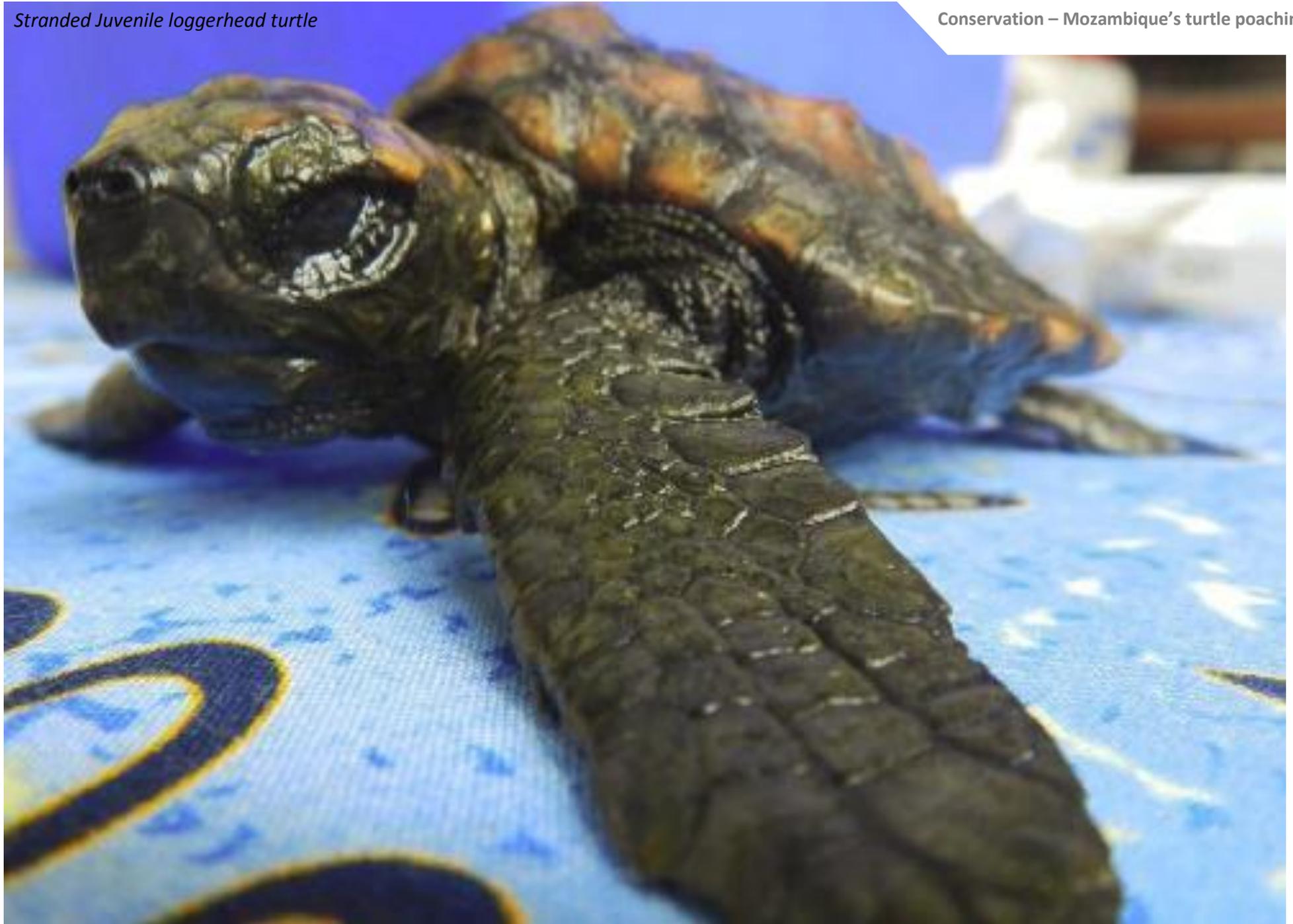
happens so we can implement effective conservation measures. The best way to answer these questions is to ask the hunters themselves. While some of the details are tough to hear, such as turtles being tied to rocks underwater on popular beaches so they can be dragged ashore when there are no witnesses, information like this gives us important insight into how poachers operate.

The most obvious record of poaching are carapaces that we find cast aside in the sand dunes. From these, we can see that the three most commonly encountered species in Inhambane are those being killed. Loggerhead, green and hawksbill turtles are all caught, with size varying from small juveniles to very large mature adults greens and loggerheads. These three species are all Endangered or Critically Endangered worldwide, and as they don't even become adults till they are approximately 30 years old, their populations simply cannot sustain the rate of poaching we are seeing in Mozambique.



Stranded Juvenile loggerhead turtle

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Hawksbill eggs being translocated



Without an accurate historical reference, it is difficult to determine exactly what impact the poachers are having on the numbers of nesting turtles. However, through interviews with long-term residents to the region, we are building an oral history of turtle populations. One of the surprising results is that the fishers are unable to describe how sea turtles are culturally important to local people. Mozambique is still recovering from 16 years of civil war. During the war, people from the south and interior of the country fled to relatively prosperous and stable areas such as the coast of Inhambane.

This population influx amplified the pressures placed on marine life by people looking for sustenance, but also resulted in a loss of local and traditional ecological knowledge about the environment. Without this traditional knowledge, valuable information relating to seasonality and sustainability has been lost, effectively rendering the coast as an unregulated and unmanageable food resource.

While this is a huge challenge in conservation terms, it provides the necessary context for solving the poaching conundrum. Modern-day Mozambique is recovering fast, with Inhambane in particular drawing in international tourists to enjoy an expanding and rapidly-developing marine ecotourism industry. For some of these inherently poor fishers who have been driven to poaching, the burgeoning marine tourism industry provides a golden ticket to switch to an alternative livelihood source. From speaking with the fishers and documenting their responses, we are beginning to see a reoccurring trend in some of their stories. Most fishers are familiar with the illegal nature of hunting turtles and are eager to switch to another livelihood. However they feel the opportunities for other work are few and far between. The challenge now is to provide people with a future that gives them the security they need to transition away from unsustainable practices.



For more information go to: <http://www.marinemegafauna.org/research/sea-turtles/>

Jess' research blog - www.mozturtles.com

Project details and updates for turtle poaching specific work funded by Rufford Small Grants:
http://www.ruffordsmallgrants.org/rsg/projects/jessica_williams

To contact Jess: jess@marinemegafauna.org for more information from the story

