

PETER BASSETT

FRANKING TITAN

On March 11 2013, in a move that delighted ocean lovers the world over, manta rays won protection from unsustainable fishing under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES). But as China's trade in manta gills escalates, is this move too little, too late? **Aaron Gekoski** of Ecomentaries.org investigates.

PHOTOGRAPHS PETER BASSETT | HELEN MITCHELL | TIM BIRKETT

MY FIRST ENCOUNTER WITH A MANTA RAY IS FOREVER ETCHED IN MY DIVING MEMORY. I WAS ONE OF A GROUP OF EAGER DIVERS CROUCHED BEHIND A CORAL OUTCROP AT TOFO'S LEGENDARY MANTA REEF. WE LOOKED UP. WE WAITED. WE HOPED. I MAY EVEN HAVE SAID A LITTLE PRAYER. AND THEN, WITH FLAPS OF ITS GIANT PECTORAL WINGS, IT APPEARED: ELEGANT, SERENE, AND LIKE NO ANIMAL I HAD EVER LAID EYES ON.

That's because mantas are unlike any other species. "It is intriguing to see how they have evolved into this amazingly efficient, underwater bird-like animal that travels the world's oceans eating the smallest animals in the sea with a large vacuum like mouth," says Dr. Andrea Marshall of Tofo's Marine Megafanua Foundation (MMF), based out of Casa Barry Lodge. "To describe them, it sounds like fiction. But here they are. Amazing and beautiful and unbelievably tolerant of us."

Mantas are particularly playful and inquisitive creatures with the largest brain to body ratio of all fish. They have been known to barrel roll around divers, or even pause, momentarily, so fishing line can be untangled from their giant bodies. But my favourite story is from the Similan Islands in Thailand, where one resident manta was known to mimic divers' arm movements with its cephalic lobes. Mantas are about more than just good looks.

It's easy to see why they have become a source of fascination for both divers and scientists. "Manta rays engage us in a way that is usually only seen in marine mammals," claims Dr. Marshall. "Researching them is particularly exciting for me because I feel like I am building relationships with my population over time and studying different individuals, not just fish...it is a much more intimate type of research than I had previously been exposed to in my scientific career."

This feisty, fiercely ambitious American lives and breathes mantas and is driven by a desire to unwrap the riddles that surround them. Due to their size, this enigmatic species does not do well in captivity, which means that almost all of what we know of them comes from studies conducted in the wild. Despite the best efforts of Dr. Marshall and other manta experts, lots of questions remain unanswered. We do not know how deep they swim, how long they live for, whether or not they sleep, or where they have their pups. "I could wrap my life up in 20 minutes if I could talk to them," she jokes. "It has been driving me insane for the last 10 years because I haven't been able to figure out where they give birth. It's 2013 and nobody has ever seen a manta give birth in the wild."

THE FACTS

What we do know is that manta rays belong to the taxonomic

family Mobulidae and have been swimming our oceans, mainly undisturbed (until now, but more about that later) for around five million years. They are cartilaginous elasmobranch fishes, making them a close relative of all sharks and rays, and are comprised of two separate species, although rumours of a third are rife, they are yet to be verified.

Manta birostris, or the giant oceanic manta, is the world's largest ray and often resides in deepwater, pelagic zones. One specimen measured 7.6m wing-to-wing, though there are reports of a 9m goliath. A giant manta may weigh over 2000kgs. With a maximum size of around 5.5m *Manta alfredi*, or reef mantas, don't quite reach such massive proportions. Their populations are more localised and they are generally found in shallower, coastal habitats and around coral reefs.

The most significant populations are found in the Maldives, Ningaloo in Australia, Mexico, Hawaii and - closer to home - Mozambique: from Zavora in the south, all the way up to the Bazaruto Archipelago. However, it's the Inhambane Province that is the mantas' playground of choice. This small stretch of coast is a critical mating and birthing ground and is home to one of the largest documented populations of both species. The MMF has identified over 900 individuals in these waters, yet the total population is estimated at 1,400. These congregations bring tourists to Tofo from all over the world, who hope to spend a little time in their company. And drink Tipo Tinto rum, of course.

Whilst Inhambane's populations are still impressive, their numbers are declining fast. I lived in Tofo for a couple of years, completing more than 50 dives. Yet I only saw more than one manta on a handful of occasions. "You should have been here a decade ago," Tofo's long-standing residents would crow. "You'd regularly see more than 15 on a single dive."

Statistics produced by MMF support this. In these parts, manta sightings have fallen by more than 80% over the last 10 years. At the start of 2000, divers would see on average 6.8 mantas per

A manta circles just below the surface, pursued by an underwater photographer. It's images like this that make the species so popular with divers.

TECH SPEC: Canon IXUS 860 IS, ISO 80, 1/320S, f/8.0



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WHILST ANIMALS SUCH AS GREAT WHITES DOMINATE THE PRECIOUS COLUMN INCHES DEDICATED TO WILDLIFE CONSERVATION, A REAL LACK OF INFORMATION EXISTS REGARDING THE DANGERS MANTAS FACE.

dive. Today it is down to .6 individuals. These losses can, in part, be attributed to artisanal fishing: it is estimated that local fishermen take between 20-50 reef mantas every year. Further out at sea, however, these numbers represent a mere drop in the ocean. Illegal industrial vessels continue to pummel Mozambique's vast coastline on a daily basis: sharks, dolphins, turtles, mantas – no marine life is safe from their endless longlines and gaping trawl nets.

Along with fisheries in Mozambique, mantas are also targeted in Sri Lanka, Indonesia, India, Peru and Mexico, amongst others, with a reported 3,400 caught every year. The actual catch is likely to be many more times that figure. Mantas make for easy targets due to their large size, curious nature and propensity to filter feed at the surface. These traits also make them vulnerable to entanglement in fishing line and strikes by boat propellers.

THREATS

Traditionally, mantas weren't even on fishermen's menus. Their meat isn't particularly tasty and doesn't stay fresh for long periods at sea. Incentives for targeting them lie elsewhere. As shark populations diminish, manta cartilage is frequently used as an alternative ingredient in shark fin soup, whilst their skin creates handbags and wallets.

Their most valuable body parts, however, are their gill rakers; the frilly filaments they use to filter feed. Demand, predictably, stems from Asia and the traditional Chinese medicine market (TCM), despite the fact that manta gills are not listed in official TCM manuals. Guagzhou, in western China, is the beating heart of the trade and accounts for 99% of the global market. One kg of "peng yu sai" - or "fish gills" - can fetch nearly R5000. Up to 80,000kg, worth up to R104m, are sold here every year.

Flying in the face of all medical evidence, it is believed that the gills improve immunity and help to purify the blood. *Peng yu sai* are also promoted as a treatment for cancer sufferers, for those with kidney problems, asthma, diabetes, chicken pox, fever, and poor circulation.

This unsustainable trade is pushing populations to the brink of collapse. Manta rays remain particularly vulnerable to exploitation

due to their long gestation periods, late maturity age, and small litters. Let's take a typical reef manta as an example. This late developer might not mate until it reaches 10 years of age. Then (if it evades the gill nets, trawl nets, longlines and boat propellers) it may give birth to just one pup every two-five years, producing no more than 15 over its lifetime. To put this into context, a great white might have more young in one litter than a manta will over its entire life.

FISHING FOR SOLUTIONS

Whilst animals such as great whites dominate the precious column inches dedicated to wildlife conservation, a real lack of information exists regarding the dangers mantas face. "People assume that just because they see them on holiday and pictures of them grace every dive magazine, these rays are not at risk. The unfortunate fact is that manta rays are a threatened species and are facing decimation from directed fishing pressures for bogus Chinese medicinal products," says Dr. Marshall.

She advocates the need for education. Only once we understand the species, their habits, and the threats they face, can we be in a position to form cohesive strategies for their conservation. "It is only by identifying the issues that put the greatest pressures on these animals, that we have any hope of managing the populations we have left, allowing them to recover from their depleted state."

Whilst the CITES listing represents a much needed boost to a beleaguered species, more needs to be done if populations are to recover. Answers may lie in the form of responsible tourism. This sustainable practice not only plays a key role in education, but also generates substantial revenue for local communities. In Tofo,

Mozambican artisanal fishermen chop up a manta ray, before selling its meat in local markets. Whilst the gill raker trade is yet to fully take off here, it is feared it could eventually overtake the shark fin industry.

TECH SPEC: Canon EOS REBEL T3, ISO 100, 1/125S, f/11.0

Gill rakers: useful for filter filtering, useless for curing ailments.

TECH SPEC: Panasonic DMC-FZ30, ISO 80, f/4.0





An Indonesian fisherman inspects his catch at Lombok market, which includes a manta and numerous devil rays.

TECH SPEC: Panasonic DMC-FZ30, ISO 80, f/4.0

MANTAS IN INDONESIAN WATERS

Indonesia is one of the largest suppliers of gill rakers to retail outlets in China and Taiwan. It is estimated that over 1,300 individuals are caught here every year. The majority of mantas are brought to Tanjung Luar market in Lombok, where they are sliced up in the streets. Their meat is then sold, before their gill rakers are dried and exported.

Without the trade in *peng yu sai*, the fishermen would barely bother with mantas: the price they get for the meat and skin hardly covers their fuel costs. Still, at the lowest wrung on the ladder, they receive as little as R350 for one ray; yet once the gills reach China, their value is up to 50 times that.

Helen Mitchell and Peter Bassett are founders of Aquatic Alliance. Based out of the Secret Garden Bungalows in Nusa Penida, this impressive couple have spent recent years travelling the world, volunteering in marine conservation. After a stint working for the MMF, they founded Aquatic Alliance, with the aim of achieving protection for mantas in these waters.

Properly utilised for their tourism potential, mantas could provide a much-needed boost to many local Indonesian economies. "Governments need to realise that the only way forward is to cherish these amazing animals; that by keeping manta rays alive and utilising well managed ecotourism, a lot more money can be made for both the local community and the country as a whole. "Blue Economy" is proving to be a big one, and we only hope Indonesia sees its potential before it's too late," says Helen.

The economic justifications for conserving mantas seem clear-cut. Yet the reasons for protecting them extend far beyond their monetary value. "Living in harmony with the natural world and its other inhabitants should be the hallmark of a civilized society. Sometimes it takes an experience like snorkeling or diving with an animal like a manta ray for people to fully realize the importance of this."

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locals are employed as dive instructors, dive masters and skippers. Tourists buy food and curios from local markets, and drink locally produced beer, before heading back to their lodges run by, you guessed it, local people. Here, the majority of people cherish manta rays: they know their livelihoods depend on them.

It is estimated that a manta is worth around R9m over the course of its life in the form of tourism and the species brings in over R900m to the industry annually. Dead in a market, a manta provides fishermen with a short-term cash injection of no more than R4000. The choice is clear; an unsustainable trade that is rapidly destroying an ancient, truly unique, species; or an industry that can support local communities indefinitely. Go figure. ■

➤ Aaron Gekoski is co-owner of Ecomentaries, a media and production company which specializes in wildlife and marine documentaries. He has just finished shooting a film on Hwange's elephant problems, *Grey Matters*. To learn more please visit www.ecomentaries.org or head to Aaron's website: www.aarongekoski.com.

www.marinemegaafauna.org

www.aquaticalliance.org

Diving in Tofo: www.peri-peridivers.com

Diving in Nusa Penida: www.bigfishdiving.com