

Manta Rays

The Oceans Gliders

by Attila Kaszo

Lady Elliot Island is a coral cay almost on the edge of the Continental Shelf on the southern part of the Great Barrier Reef. The largest and nearest mainland town is Hervey Bay from which regional aeroplanes commute to the Island.

Surrounded by a fringing coral reef, it's location is a magnet for large oceanic visitors like Manta Rays and Whales, which feed on plankton rich water fed by upwellings from the East Australian Current. There are of course many other notable species there as well, such as Dolphins and Turtles, but the main draw card is the Manta Rays (*Manta alfredi*).

Up close and personal, these rays are enormous, easily dwarfing the diver. Their wing span can extend to about 7mtrs, although the southern east population that frequent Lady Elliot Is., seem to average about 5mtrs across. They have the largest brain to body size ratio of any fish and can weigh in at over 1580kg.

An absolute delight to swim with because they are inquisitive and make great photographic subjects. That doesn't infer they are easy to get good photographs of, but rather like any wild animal patience and perseverance can be a virtue.

The most Mantas I saw on a single dive was six, and only on one dive were they completely absent, but the diving was still pleasant due to a school of Eagle Rays which where equally delightful to watch. Incidentally, Eagle Rays are



Aerial view of Lady Elliot Island positioned on the far south of the Great Barrier Reef in Queensland. The fringing reef is clearly visible and the islands airstrip can be seen cutting through the vegetation.

Nikon D850 - Nikkor 24-70mm / 1/2000th @ f5-400iso

not protected in Western Australia, and can be recreationally targeted by fishers. I question is why there isn't a Federal Government policy in place protecting these fish in all territorial waters.

On most dives we experienced some level of current either at the beginning or end of a dive, but the current wasn't too difficult to cope with, even with my cumbersome 11kg camera rig. The chop on the surface however was a real pain to contend with.

The currents carry plankton and other sedimentary material from the Continental Shelf at various times of the year, to Lady Elliot Is. which lays only about 10km from the shelf. These nutrient rich upwellings provide the food source vital for the Manta Rays and other marine creatures.

For photographers though, the nutrient filled water also provided a significant amount of backscatter which proved to be an issue for some



This Manta ray is almost motionless near a cleaning station. On the underside cleaner wrasse can be seen attending to their host.

Nikon D800 - Sigma 15mm / 1/200th @ f13– Fill strobes, 400iso

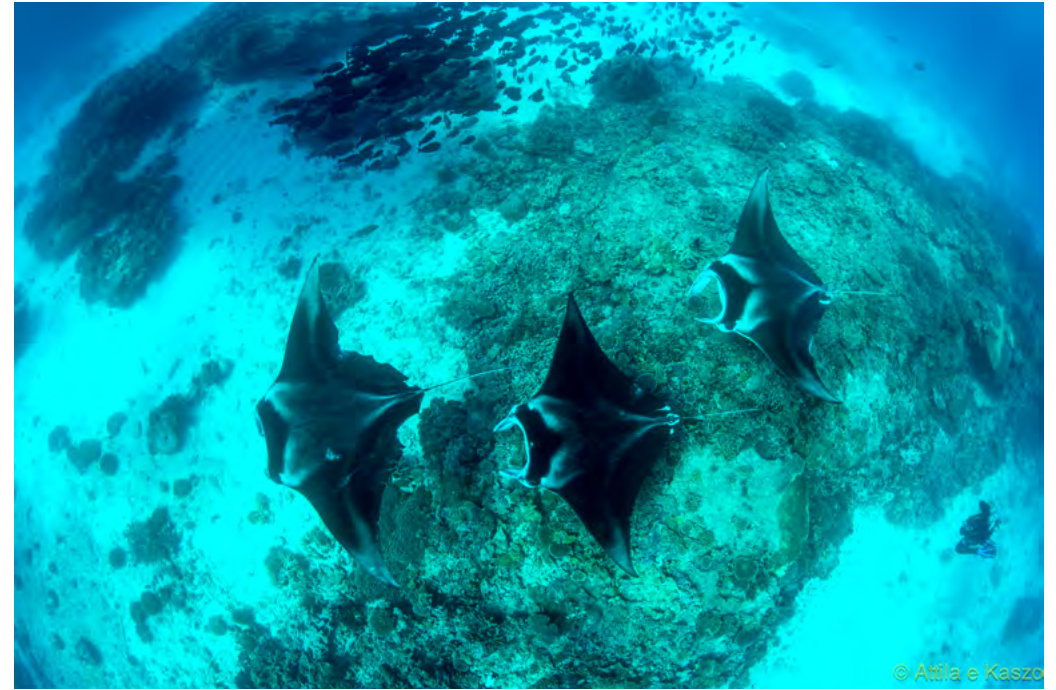
photographers, irrespective of how strobes were placed. I tended to use the strobes only as slight fill rather than any type of key lighting, relying on ambient light to give me the results I intended. In these circumstances it is almost impossible to get away from that “blue look”, but somehow I think it works with Mantas.

Manta Rays are one of those animals that are awe inspiring for many reasons. Their size and ability to hover almost effortlessly in 3-4k currents as I witnessed in Indonesia, was astonishing.

What superb hydrodynamics this fish has to be able to manoeuvre its huge body so effortlessly and yet reach speeds exceeding 32km when challenged.

One of the things I found intriguing about Mantas are their markings. Each ray has unique marks, generally displayed on its underside, giving researchers a unique data base to operate from.

At Lady Elliot Is. I spoke with researchers from Project Manta, an organisation that has been actively monitoring Manta Ray behaviour and



Three Manta rays pass close to a diver dwarfed by their 5metre wingspan.

Nikon D800 - Sigma 15mm / 1/80th @ f14– Fill strobes, 400iso

habitat range since 2007.

The research team have identified over 1,200 individuals since monitoring began, but they could not conclude if Manta numbers have increased or decreased. Through tagging methods, they did establish that revisits did occur, but the gender of the Rays was not known.

Lady Elliot Is. was declared a Marine Park in 2005 and accorded a “Green Zone” status. This zoning status effectively means “No Take” of anything terrestrial or underwater.

The Great Barrier Reef Marine

Park Authority has allocated 33% of the entire park to such zoning measures. It is not clear whether the large numbers of Manta Rays visiting Lady Elliot Is. (about 80% identified, return annually) formed the basis of the zoning plan, as Project Manta didn’t begin its monitoring program until 2007.

Even though the region has significant Manta Ray intrusion in “peak” season, and there appears to be some “resident” rays, the area could not be concluded as an aggregation site. Juveniles have never been

recorded, but pregnant rays have.

Although Manta Rays are found all around the shallows at Lady Elliot Is., they appear to favour an area where several coral heads or “Bommies” emerge from the otherwise sandy bottom. These coral formations form “cleaning stations” inhabited by cleaner wrasse. The fish play a vital role through a form of cleaning symbiosis, attending to the needs of all fish that visit, including these giant Manta Rays. Rays can be seen almost motionless above the bommies while they are attended to by the tiny wrasse. These are some of the best times to get good pictures of the “posing” Mantas.

The importance of these cleaning stations cannot be over emphasised. The fish visiting these areas rely not only on parasite removal, but also wound cleaning. So in effect these stations are more akin to a health clinic than a random cleaning stop.

Given that the range of Manta Rays extends from Heron Is. Qld to Solitary Is. off Coffs Harbour, NSW, and that effective and conclusive monitoring can take up to about twelve years, it’s probably reasonable to expect conclusive data to be formed by this time.

What is known however, is that male rays reach maturity in 6-8 years while female rays mature in 10-13 years. The gestation period is between 12-13 months and at birth they have a wingspan between 1.2m – 1.5mtrs. Fertility is considerably low in comparison with other fish because females usually have 1 or 2 offspring at a time. Manta rays produce offspring once about every 2-5 years and can maintain this for about 30 years.

Without predation, human or otherwise they have been known to live for more than fifty years.

It also appears, that a trend toward greater



Manta ray (Manta alfredi) with resident Ramora fish.
Nikon D800 - Sigma 15mm / 1/80th @ f8 – Fill strobes, 400iso

mortality of these beautiful fish is due to microplastics. These tiny plastic particles less than 5mm in size are ingested as the animal feeds on plankton in the water column.

An extract from a science paper provides an overview statement:

“The small size of microplastics (<5mm in size) are what make them an environmental hazard. Throughout the world oceans, filter feeding organisms like krill, fish, whales, rays, corals,

sponges, crustaceans, and bivalves spend most of their time feeding on small organic particles in the water column. However, these organisms are not usually able to decipher plastic particles from their typical food source and end up consuming them. Microplastics are not easily broken down by marine organisms and often block their digestive tracts leading to mortality. Even if the organism is able to swallow and pass the plastic particle, it is still using precious energy to digest a particle



The Dive Staff at Lady Elliot Is. are well versed in Manta etiquette and its wise to follow their instructions if you want to get the beast out of the dives. Nikon D850 - Nikkor 24-70mm / 1/60th @ f2.8-640iso



Alan Simpson (Simmo) is the senior skipper at the resort, but has much more to offer divers than safety advice. He is a veteran diver with thousands of dives to his credit and over 50 years of experience.



Lady Elliot Island at sunset. Such a spectacular event that chairs, wine and nibbles are provided for the guests. Really a perfect way to finish the day.



A Bull ray heading a school of Eagle rays around a bommie. Nikon D800 - Sigma 15mm / 1/125th @ f8 - Fill strobes, 400iso

that has no nutritional or caloric value, leading to decreased fitness and energy. Studies have shown that marine species from the size of plankton all the way up to whales are ingesting microplastics in the marine environment (Wright, et al. 2013)."

I understand that the Manta Ray research team are also studying this issue and will publish their conclusions at the end of research. I think it's fundamental however to accept now with the research that has already been undertaken and finalised, that plastics are a significant threat to marine wildlife. This coupled with indiscriminate harvesting of sharks and rays globally and by-catch

fatalities would seriously effect their population overall.

I still cannot find enough data on by-catch rates of Manta Rays in Australia, nor can I conclude the amount caught in shark mesh nets off the East Coast. I suspect it would not be a minimal amount, but even if it were, one death is one too many given their reproductive and maturity rates.

Given that the International Union for the Conservation of Nature (IUCN), considers the Manta Ray to be near threatened because of its low reproductive rate and consistent harvesting by fishers, Government intervention and action is imperative if we are to continue to see this species



(Above) Wreck of the yacht Severance at Lady Elliot Is. She sank in 1998 and rests in 21mtrs of water.

Nikon D800 - Sigma 15mm / 1/250th @ f7.1 – 400iso

(Left) Big schools of Silver Sweetlip congregate close to the wreck as do other large fish species like Wobblygong sharks and Cobias.

Nikon D800 - Sigma 15mm / 1/80th @ f14– Fill strobes, 400iso



A perfect shallow water artificial reef, the Severance is a haven for all sorts of marine creatures and makes a great photographic subject.

Nikon D800 - Sigma 15mm / 1/80th @ f7.1– 400iso

exist.

For me the other notable dive site was the wreck of the Severance. This intact yacht sank in 1998 in 21mtrs of water coming to rest on a sandy bottom. As an artificial reef in an otherwise barren region, it has proven to be a haven for all sorts of marine life. In my view the wreck is worth several dives (which I didn't have time for) to really get the benefits of all the macro life inhabiting the rigging and the superstructure.

In the short time I looked around there was just about everything a photographer is looking for in a dive

site, from large pelagic fish to tiny invertebrates.

It's certainly worth the effort to visit Lady Elliot Is. during any season, but particularly during the Manta season June to August. Conditions can vary daily, but overall, the clarity is usually good enough to get some great shots of Mantas, especially if you stay on the bottom and let them come to you.

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