

Mega Fauna Off Africa Mozambique

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Giant grouper waits patiently for its next meal at Manta Reef

On the southeastern seaboard of Africa, along a 200km stretch of the Mozambique coastline, Mother Nature has conspired to create what can only really be described as the perfect underwater biological storm. For it is in this remote area that several major African and Indian Ocean currents converge, producing some unique counter-cyclic eddies that suck up rich nutrients from the deep trenches to the south and create huge quantities of zooplankton, the life source of oceanic mega fauna.



Giant frogfish at Salon (above). The Diversity Scuba dive boat (left) heads down the coast to Krakatoa. PREVIOUS PAGE: Colorful local fishing boats in the warm morning sun atTofo beach in Mozambique



Mozambique

This unique mechanism has been occurring largely unnoticed for thousands of years, and has undoubtedly played a major role in the evolution of two creatures at the tip of the mega fauna food chain—the whale shark and the manta ray.

The area, in the southern Mozambique province of Inhambane, is host to some 20 percent of the world's population of whale sharks and an estimated 1,400 individual manta rays—one of the largest populations of manta rays identified anywhere in the world.

Ironically it was one of the scourges of Africa—tribal warfare, which descended into the protracted and very bloody Mozambique civil war—that kept this unique natural phenomenon hidden from the world.

But times have changed, and peace has returned to Mozambique, but with it has come other threats that are having a significant impact on this unique marine mega fauna aggregation and now threatens its very survival.



Mega fauna aggregations

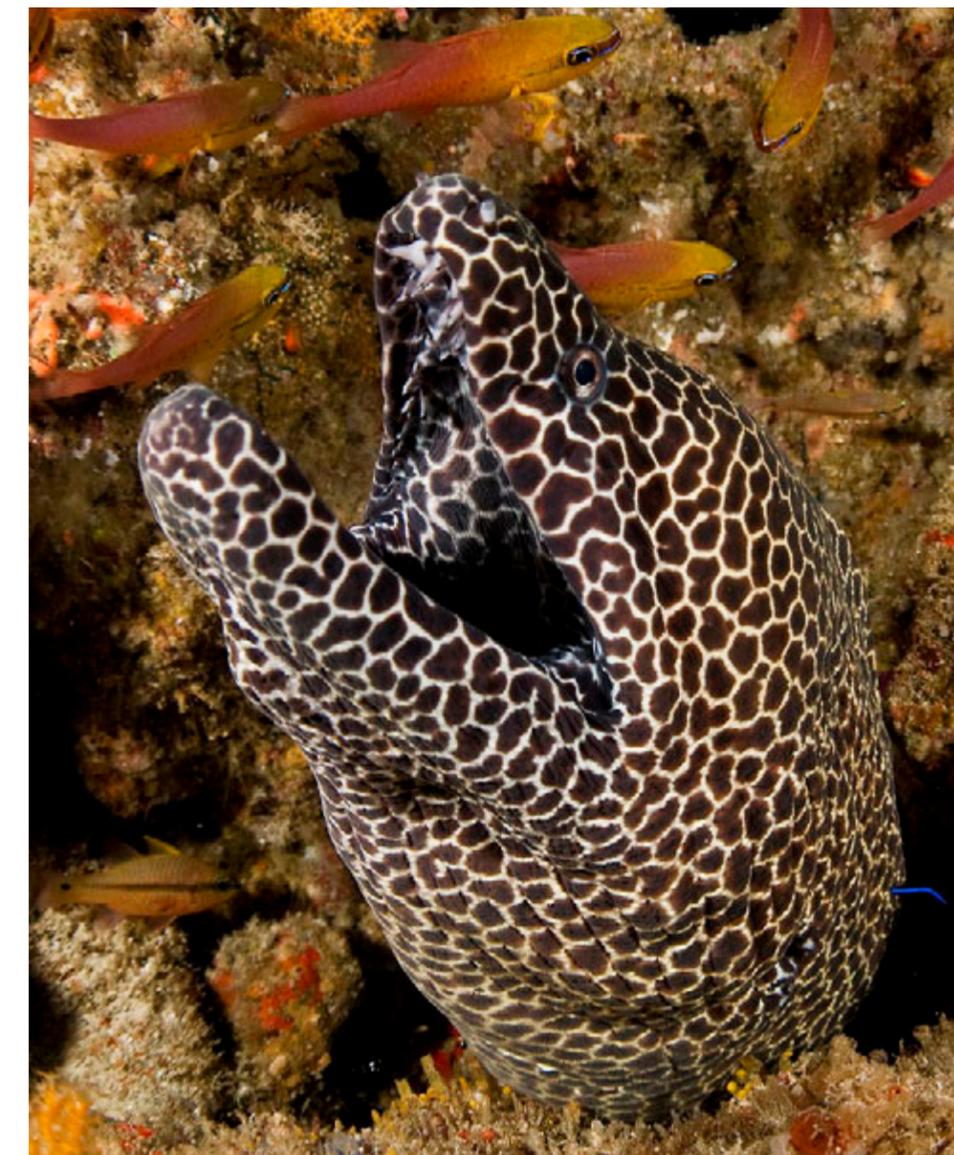
Aggregations of marine creatures happen when a combination of natural circumstances occur and create the ideal conditions for large groups of fish

or mammals to gather at a specific geographical location.

Many, such as South Africa's Sardine Run, South Australia's giant cuttlefish or Tonga's whales are very well known,

CLOCKWISE FROM ABOVE: Small school of Moorish Idols at Arena; Large scorpion fish blends in with reef; Whale shark "banks" as it dives; More schooling fish at Arena—a very rich dive site!





Large bull ray (above) cruises past at Manta Reef; Superbly camouflaged giant frogfish at Galleria (top left); Honeycomb moray eel at Manta Reef (bottom left)

while others are still to be discovered. But they typically all have the common denominator of seasonal influences creating the pre-conditions for the aggregation to occur.

In other words, it happens once or maybe twice a year for a limited time only, and the creatures that aggregate are basically “hard-wired” to make their way to the location, as they sense the pre-conditions developing.

For example, at Ningaloo Reef in northwestern Australia some seven to nine days after the March or April full moon is a massive coral spawning, which attracts large numbers of whale sharks that stay in the area for two to three months to feed on the resultant

zooplankton.

But in southern Mozambique, the unique counter-cyclic eddies produce a rich year-round source of zooplankton concentrated in a 200km stretch of coastline from Zavora in the south to Pomene in the north. The availability of such a rich food source makes the Tofo area an extremely important one to marine mega fauna.

Praia Do Tofo

The small beachside village of Tofo, situated in a picturesque bay about 16 kms from the regional center of Inhambane city, has become the epicenter for the large numbers of tourists

visiting the area to experience first-hand the mega fauna.

Several dive centers have set up shop and numerous guest houses and small hotels have opened to accommodate the influx of tourists, which is all very positive in a poor country desperate for growth. Tofo has also become the base for some ground-breaking research into both manta rays and whale sharks and some quite amazing things are being discovered about these wonderful creatures.

Marine scientists Dr Andrea Marshall and Dr Simon Pierce are leading the research, with Marshall focused on manta rays and Pierce on whale sharks.



Together they have created the Foundation for the Protection of Marine Megafauna (Marinemegafauna.org), which is based at and supported by the Casa Barry Lodge (Casabarry.com) in Tofo.

Every Monday evening in Tofo, Andrea Marshall gives a presentation on her work with manta rays, and on Wednesday's, it is Simon Pierce's turn to talk about his research on whale sharks. Then on Friday nights, PhD student Chris Rohner does an excellent talk about the overall marine life of the Tofo area.

I spent a total of two weeks in Tofo and was lucky enough to arrive over the weekend and caught Andrea's talk on the Monday night. Frankly, I was stunned at what she presented—not only was it factual and interesting, but she also has a great repertoire of one-liners that keep you fully entertained as well as enthralled.

So interesting were all three presentations that I went twice to all of them and became a little concerned that I might



CLOCKWISE FROM TOP LEFT: Large puffer fish at Clown Fish Reef; Cruising leopard shark at Oasis; Divers and giant grouper at Oasis; Scorpion fish blends in at Galleria



Rafael (left), one of Diversity Scuba's Mozambiquan dive masters; Leopard shark at Arena (above); Schooling surgeon fish at Oasis (left); One of the many crocodile fish at Crocodile Rock (below)

Mozambique, besides their overall numbers, are the high percentage of shark bite injuries.

Andrea Marshall's research indicates that about 75 percent of the identified mantas have these injuries, and a closer look at the actual wounds has confirmed that while

the majority are the result of attacks by tiger and bull sharks, a total of 11 other sharks have been positively identified as the predator.

The attacks appear to be random and opportunistic whereby the shark spots the manta and then attacks from behind in the ray's blind spot and manages a single bite before the startled manta accelerates away towards safety.

It's almost—but not quite—a win-win situation, because the shark is happy to have had a quick snack while the manta is presumably happy to have survived the attack, and because all of it's main organs are concentrated in it's core, such attacks are rarely, if ever, fatal.

Manta cleaning stations

Large marine creatures inevitably suffer from significant numbers of tiny parasites that are extremely difficult



This giant grouper was so close I could tell if it had halitosis

be reported to the local police for stalking.

Tofo, itself, is a small but very pleasant place with a few nice restaurants and bars, but if you go there, plan your trip so you can attend all three presentations—you won't regret it!

Fast food—manta style...

One of the most significant things about the manta rays in



Reef manta ray at one of the cleaning stations at Manta Reef (left); The shark bite wound on this reef manta is clearly visible (below)

Her subsequent research has established that around 80 percent of the manta rays in the area are female and at least 55 percent of the overall population is mature and at breeding age. These statistics, together with the numerous different pregnant females regularly sighted and the constant supply of zooplankton, indicate that Tofo is almost certainly the first recorded manta ray breeding site in the world.

Tofo whale sharks

The biggest fish in the sea are almost a constant fixture

in the Tofo area, drawn as they are by the availability of zooplankton.

A fully grown whale shark can get to almost 20m in length and 34 tons in weight by the time they reach full maturity at about 30 years old, but these leviathans of the sea are rarely if ever seen in the Tofo area. Instead research by Dr Simon Pierce has established that the area is dominated with juveniles in the range from 3-10m.

Pierce, a Kiwi marine biologist who readily admits he had never seen a whale shark before arriving in Tofo in 2005,

has established an equally impressive database to the one on manta rays built up by Marshall.

This data, together with aerial surveys by South Africa's Natal Shark Board has shown that there is a very high concentration of whale sharks in the Tofo area of around three per square kilometer, which means around 70-80 of them at any one time.

Whale shark migration

Whale sharks are solitary oceanic creatures, so for so many of them to gather as they do in the Tofo area

for them to remove, and while breaching is known to be a way of communicating, it is also thought to be a form of shock treatment used to shake them free.

But just as large reef fish and moray eels develop relationships with smaller fish and shrimp—allowing them to feed on their parasites under a temporary truce in the eternal cycle of hunt and eat—so do mantas frequent specific locations, called cleaning stations, where they will hover patiently while cleaner fish perform a similar routine.

Cleaning stations are the perfect place to observe these magnificent creatures as they

linger and allow the parasites to be removed. However, it is unusual for individual mantas to remain around a cleaning station for much more than an hour.

But in the Tofo area, it is quite normal for mantas to remain for several hours at a time, because not only are their parasites being removed, their wounds are being cleaned of dead and infected flesh, thus allowing them to make a full recovery from their attacks.

Interestingly, Marshall has noted that different types of cleaner fish service different parts of the mantas, with sergeant majors cleaning the manta's mouths, cleaner

wrasse doing the honors on the gills and butterfly fish providing the wound management treatment.

Manta crèche?

Marshall arrived in Tofo in 2003, looking for subject matter for her PhD in marine biology, and when she discovered the sheer numbers of manta rays and whale sharks in the area, quickly realized she had found the right spot.

Describing it "like choosing between chocolate and pizza", she elected to study the mantas and has since built up a visual database of over 700 manta rays.





CLOCKWISE FROM ABOVE: A whale shark feeds on plankton near the surface; Schooling fish at Manta Reef; Another giant grouper at Manta Reef waits patiently for its next meal; Electric ray at Clown Fish Reef

indicates that the region plays a significant role in the growth cycle to full maturity.

Very little is currently known about overall whale shark migration patterns, however, Pierce's data has shown that around 70 percent of the juveniles that visit the Tofo area are never seen again—meaning that they are just passing through and indicating that the Tofo corridor is an important transit and feeding area for whale sharks as they mature.

Conservation

The obvious benefit of having such intensive and regular research in a mega fauna hot spot like Tofo is that over time a clear picture starts to emerge about the overall health and vibrancy of its star attractions.

Unfortunately, there are clear indications of a possible decline in both the whale shark and manta ray populations, but whether this is an actual decrease or just a reduction in their 'sightability' in the usual locations is not clear at this point in time.

Of major concern is the use of long line and net fishing related to satisfying the ever-increasing demand from locally-based Chinese 'businessmen' for shark fins, of which manta rays are basically collateral damage rather than the main game.

Aaron Gekoski with his, *Shiver: A finning crisis story*, documented this very well in issue #41 of *X-RAY MAG*, but on my last day in Tofo, I also witnessed first hand a sickening example.

My two weeks of diving over, I was getting a nitrogen break before the long

flight back to Sydney and was out taking early morning photographs when I saw a tiny local fishing boat returning from its night's work.

Thinking this may provide a scenic



photo opportunity, I positioned myself to catch the boat being pulled up on to the beach by the weary fishermen. Then, I realized that under the nets piled up on

the boat was a barely alive but fully mature mobula ray.

To my horror, the ray was promptly pulled out of the boat and slaughtered in front of me, as I struggled to capture the



scene. Then, I saw that one of the fishermen had a shark fin in a plastic bag and realized that the victim had obviously just been thrown over the side after being parted from its prized appendage.

It was a totally shocking scene to behold and one that was made even worse by the slow realization that similar events had probably taken place every day I had been in Tofo, had I actually looked for them.

The solution?

While it is very easy to self-righteously tell the Tofo fishermen that they should not do such things, the fact is that my stomach was full from a pleasant breakfast at my guesthouse while the fishermen



need to earn money to do the same for themselves and their families. With no other way to do it but take their catch from the sea, the lure of easy money from the Chinese 'businessmen' is understandable.

Marshall and Pierce understand this mechanism very well and are trying to establish a marine park in the critical 200km Tofo corridor that will achieve the dual objectives of protecting the area's mega fauna while allowing the local population to benefit—not

just the hotel and dive shop owners. Easier said than done, but their work over the last six to eight years has

provided essential insight into the most problematic areas, such as the southern village of Ligoga, which has become a manta ray hunting black spot.

An all-encompassing southern Mozambique Marine Park, with no fishing at all is highly unlikely to either get approved or be successful. But if the key locations can be effectively protected it could ensure the survival of the very special mega fauna of the Tofo area. Let's hope they are successful. ■



CLOCKWISE FROM TOP LEFT: Downtown Tofo; Fishermen drag their boat up onto the beach; The mobular ray is butchered on the beach; The fisherman and the freshly taken shark fin; The shark fin and the remains of the mobular ray (inset)



IMAGES THIS PAGE:
Feeding whale shark

Mozambique

entering the personal space of Tofo's mega fauna, a code of conduct has been established by the dive operators in conjunction with Marshall and Pierce.

I was pleasantly surprised to see how well and how sensibly all the staff at Diversity Scuba, who I dived with while in Tofo, implemented this.

Underwater, divers are not allowed to enter what I would call the "comfort zone" of the manta rays at the cleaning stations. Instead, there were designated observation areas where the divers were positioned, and these tactics meant that the mantas were not intimidated by the sudden appearance of a large number of noisy underwater animals.

As often happens with intelligent creatures, the mantas would come and investigate after some time, meaning that the encounters can be just as intimate but very much on their terms.

Similarly, to avoid damaging the critical reef infrastructure, all the guides were very careful to

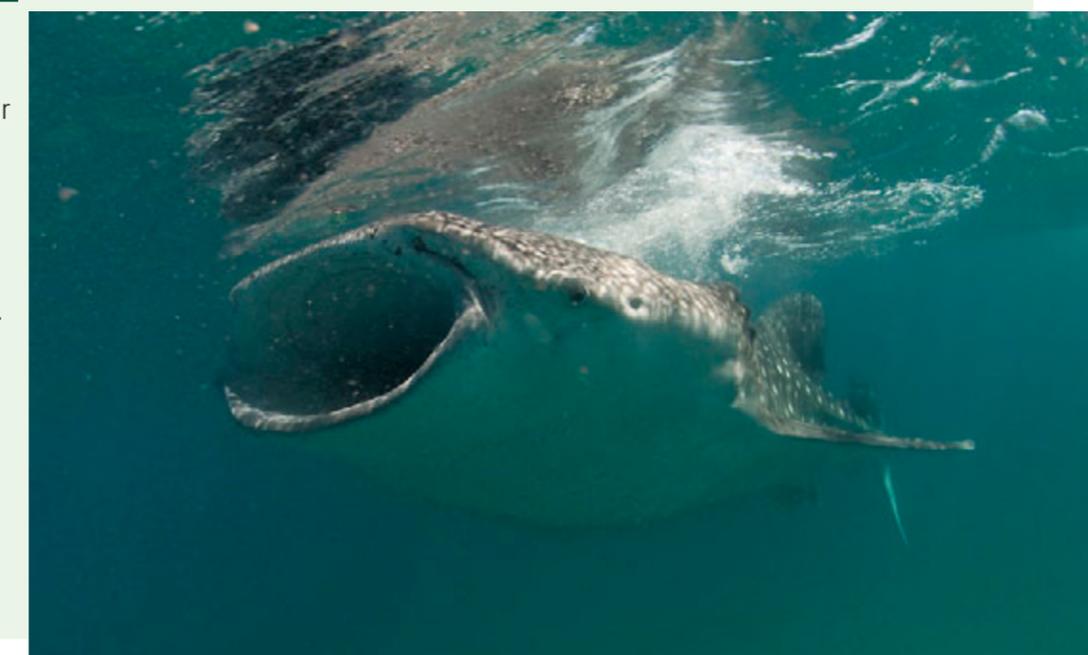
ensure none of the divers kneeled or otherwise damaged any part of the Tofo reefs.

With the whale sharks, all the organized interaction with them is part of a 'safari' whereby parties of snorkelers are taken out on RIB's launched from the beach South African style.

There is a large feeding area just to the south of Tofo, which is rich in zooplankton, and the safari boats cruise the area looking for whale sharks. When one is spotted, great care is taken to ensure that minimal stress is placed on them.

The snorkelers are dropped quietly in the water 20-30m upstream of the whale shark, so that it swims into the waiting party, who have been strictly advised not to try and obstruct the sharks in anyway.

Experience has shown that this produces the best and closest interaction, and any closer interaction forces the shark to 'bank' by turning its back on the potential threat and diving deeper. ■



ABOUT TOFO
Tofo is a pleasant and picturesque place that owes its relative prosperity to the marine mega fauna and the people who come from all over the world to see them.

The 'town center' is a collection of huts and stalls selling t-shirts, beers and various other items and comes alive on a Sunday afternoon when many people come from Inhambane after morning church to sit on the beach and drink the local beer.

By about five in the afternoon there is a distinct street party feel, but by about eight, everybody

has gone, and the empty beer bottles are the only tell-tale sign.

GETTING THERE
The nearest airport to Tofo is the regional center of Inhambane, a 40-minute drive from Tofo.

LAM, the national airline of Mozambique, has regular flights from Johannesburg in South Africa.

Although slightly quixotic, Inhambane is an international airport and the solitary customs and immigration official will grant you a visa on arrival, paid with US\$25.

There was only one ATM in Tofo,

at the supermarket and petrol station on the edge of town, but it only takes Visa cards. There is no bank.

WHERE TO STAY?
There was no major hotel in Tofo when I was there, although major renovations were underway of the rather rundown looking hotel Tofo Mar, which should address that. Most accommodation seems to be in guest houses and lodges, which is what I stayed in and was kindly arranged for me by Christophe Chazot of Terra Profunda (www.terra-profunda.com).

DIVE OPERATORS
There are now several dive operators in town, and all appear to be following the code of conduct.

I dived with Diversity Scuba run by expat Englishman Mark Whaley, and I found them to be very well organized and efficient. I was particularly impressed with how well the local Mozambique dive guides and dive masters have been trained by Whaley and his team.

TOFO CODE OF CONDUCT
To minimize the impact of a relatively large number of tourists



Mozambique's Zavora & Tofo

Jewels of East Africa

Text and photos by Scott Bennett

Mention Africa to most divers and the Red Sea or South Africa usually springs to mind. To many travellers, let alone divers, Mozambique is not exactly high on most people's bucket list. Less than 20 years ago, the very idea of visiting the country would have been regarded as a madman's folly. Upon gaining independence from Portugal in 1975, a nearly two-decade long civil war wreaked havoc upon the once affluent colony, decimating its people, infrastructure and wildlife.

After the cessation of hostilities in 1994, the country was bequeathed with the unenviable tag as the world's poorest by the United Nations. Since that time, it has made remarkable strides towards recovery and is rapidly gaining renown as the rising star of the African diving scene. When an opportunity to visit presented itself, I jumped at the chance. Having visited Africa for the first time two years earlier, I was eager to return and experience a brand-new destination.

"No pain, no gain" is an idiom that certainly applies to air travel these days, especially if you are a diver and photographer. From my home in Toronto, Mozambique proved to be somewhat of a long haul. After breaking up the trip

with a few days in the United Kingdom, it was an 11-hour overnight flight from London to Johannesburg. After going through customs and collecting my bags, I set out for the other end of the massive terminal to connect with my LAM (Mozambique Airlines) flight to Inhambane in Southern Mozambique.

Shortly after takeoff, Johannesburg's urban sprawl gave way to the patchwork green of farm country. Continuing eastward, the landscape became increasingly parched and within an hour, we were over Mozambique.

My first impression was one of space. As far as the eye could see, scrubby

acacia trees punctuated the landscape along with intermittent patches of gleaming sand from dry rivers. Save for the occasional sliver of a dirt road, human habitation had all but vanished. Before long, the Indian Ocean's turquoise expanse appeared on the horizon and the landscape reverted back to a lush

green.

An hour and 20 minutes after takeoff, we landed at Inhambane's diminutive airport. Upon completing the world's most refreshingly simple customs form, the officer attached my visa, my US\$15.00 fee and entered Mozambique. Patiently waiting outside was Jon





Garden of soft corals at Zavora (left); Moray eel. PREVIOUS PAGE: Coast view at Zavora

Wright from Mozdivers. After loading my gear aboard the truck, we made a brief stop in town to pick up one of Jon's dive masters and set out for the drive to Zavora along the nation's sole north to south highway.

Enroute, I was surprised to see long-abandoned railway cars emerging from tangles of vegetation. During the war years, the railroads were sabotaged by the RENAMO (Resistência Nacional Moçambicana), the Mozambican National Resistance. With bridges bombed and tracks torn up, the weathered shells are all that remains of the once vital north-south rail link. Flanking the road was another curious sight: a seemingly endless number of stalls selling peri-peri sauce, Mozambique's ubiquitous fiery condiment.

An hour after leaving Inhambane, a

sign proclaimed the turnoff for Zavora Lodge. Trading the smooth tarmac for an earthen road of burnt sienna, I finally felt like I had arrived in Africa. After a pleasant but bouncy ride passing rural scenes of coconut palms and fields of sugar cane, we arrived at Zavora Lodge, my home for the next six days.

Consisting of a bar and restaurant, beach front houses, bungalows and campsites, the lodge offers a commanding view over Praia de Zavora Bay. Beneath windswept dunes, a vast expanse of empty beach vanished into the distant midday haze. With the exception of a few nearby houses, we seemed to have left civilization far behind.

I also noticed something else was conspicuously absent: a jetty. And for that matter, a boat. I began to

ponder as to how we would venture out to the dive sites. The next morning, I would discover that Mozambique diving would be unlike anything I had experienced before.

After checking in at reception, I headed for my room. Ascending a flight of stairs, the view at the top revealed a sight that was decidedly incongruous with the African beachside setting. The block my room occupied was essentially an elongated log cabin that looked as it had been transported from my native Canada! The room was simple but comfortable, the large bed draped with a frilly cascade of mosquito netting.

Afterwards, I met up with Jon at the bar for a beer. Manica, the local brew, was a name that I seemed genetically unable to articulate,



Zavora sunrise (above); Three views of Zavora Lodge (left and right)

mangling its pronunciation daily, much to the bewilderment of the barman.

Established as a fishing lodge in the 1950's, Zavora was a favourite destination among South African anglers during the colonial days. With the country a tourism no-man's land during the war years, the lodge was abandoned. Re-opening a decade ago, the lodge is now run by South Africans Charles and Carol Maker and the fishermen have returned in droves. Zavora is a relative newcomer on country's diving scene, with the dive shop open having been open for only two years. With Mozdivers the only game in town, we would have all the sites to ourselves!

After a tasty dinner of a chicken wrap and chips, I hurried back to the room to

assemble my camera gear for the next morning's dive. With the generator set to shut down at 10:00pm, I managed to get everything finished in the nick of time. Safely ensconced within my mosquito-netted bed, I was lulled to sleep by the crashing surf below.

Diving

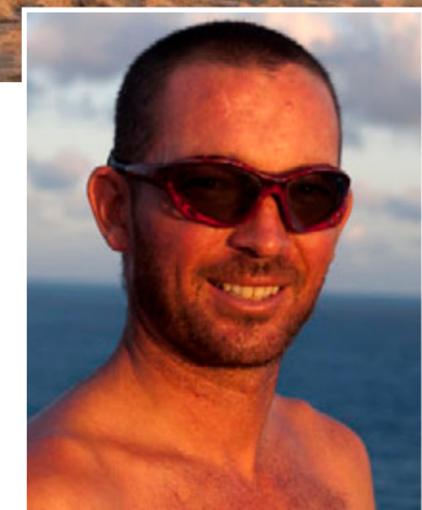
As the day's first dive wasn't until 9:30, I had

a nice leisurely start, just the ticket after my grueling trip. Arriving at the dive shop, I started to assemble my gear and suit up. As the dives would be deep, Jon suggested we use nitrox to maximize our bottom time. It was then I noticed the inflatable boat parked alongside the shop's open wall. Brandishing a pair of twin outboard engines, the *rubberduck* is the mainstay of the Southern African diving scene.





CLOCKWISE FROM LEFT: Fishing boats on the beach at Zavora; Fishermen preparing for the day's outing; Portraits of Manuel, Yara and Jon



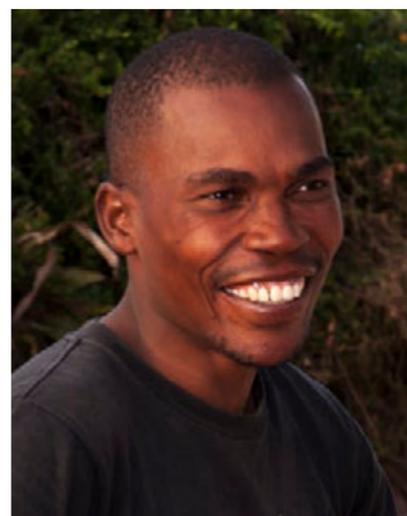
With no protective bays along the coastline, the perpetually crashing surf made erecting a jetty

impossible. Once the gear was loaded, the tractor rumbled down the sandy incline to the beach below. In the meantime, Jon gave us a quick rundown of the day's diving.

Deep Reef South

First up was Deep Reef South, situated approximately 10km offshore.

Running parallel to the coast, Zavora's "deep reef" system features multiple dive sites with depths varying between 24 to 45 metres. Our entry point was approximately 500m further down the beach, where a section exposed of reef provides shelter from the crashing surf.



As I was the day's only diving guest, it was going to be an employee trip and something of a mini United Nations. Along with Jon and myself, was Brazilian Yara Tibirice, director of the Zavora Marine Lab and nudibranch enthusiast; Pete Berney, her intern from the United Kingdom;

Mozambican guide, Vino; and dive master, Manuel. I later discovered Manuel to be something of a celebrity; he was the first-ever certified Mozambican tech diver.

Shortly afterwards, the tractor re-appeared and was hooked up to a two-wheeled wagon. "Hop aboard!" enthused Jon, and everyone piled on. Clumped together on a dark metal

wagon wearing black wetsuits proved decidedly toasty! Bumping along, we passed an assembly of fishing boats parked along the beach before reaching the entry point.

Jon often drives the tractor himself. I could just envision Mozdivers' help wanted ad: Experienced dive master required with technical training—tractor operation skills an asset.

Those expecting lavish pampering are in for a bit of a surprise, as Mozambique diving is very much a hands-on operation with guests doing their part to assist with the launch.

Getting the boat in the water proved to be an unequivocally tricky operation. The tractor has to back up at just the right speed so the trailer halts right at the water's edge and the boat can slide off into the surf. If the trailer stops too close to the surf, the wheels can be easily be mired in the wet sand. As an added hazard, the beach was a bit of a minefield, with scores of bluebottle

jellyfish washed ashore by the incoming tide. Not something one would care to trod on.

Happily, our skilled driver triumphed on the first try. Everyone rushed to turn the boat around so the bow faced the ocean, pushing it forward so it didn't get bogged down in the sand. Once positioned, everyone clambered aboard, and we set out.

After 20 bumpy minutes, I asked Jon how much further we had to go. "We're halfway there," he responded cheerfully. Seeing my crestfallen expression, he laughed. "We're here!"

Part of an offshore chain of reefs, Deep Reef South features a large plateau at 27m with an east-west running wall descending to a sandy bottom at 32m. With the coastline 10km away, I marveled as to how it was discovered in the first place. According to Jon, local fishermen have long known of its existence as a prime fishing spot. With no discernible landmarks as a guide, the



CLOCKWISE FROM FAR LEFT: Snapper school; Bigeye school; Jon and potato bass; Starfish

Mozambique

soft corals, joined by aptly named sailfin rubberlips, Diana's hogfish, bigeyes, blue-banded snapper and massive potato groupers. At one point, I nearly blundered into metre-long honeycomb moray leisurely undulating between outcrops of coral. A school of barracuda even made an appearance, making this one of the most action-packed dives I've ever been on. The entire site

looked so untouched it felt like we were the first to discover it.

I also learned a vital lesson about Zavora: never turn off your camera and strobes, even when in blue water. While ascending to the safety stop, a hefty potato bass cruised in for a look, soon followed by a school of very peculiar fish. At first, it appeared to be a school of silvery flounders undulating through the water column. As they passed beneath us, I realized they weren't flounders at all, but a type of fish swimming on their sides.

Later on, Jon informed me they were carpet trevally, a species with no

start. Moments after plunging in, Yara quickly resurfaced and exclaimed, "I just saw a marlin!" Being the last one in, I quickly descended to catch up with the others. Seconds later, I was engulfed by a shimmering horde of big-eye trevally, presenting a classical photo dilemma:

Should I stop to take pictures or keep going? Not relishing the prospect of being left behind, I fired off a few images and caught up with the group.

Arriving at the bottom, we surprised a leopard shark, which abruptly departed for quieter surroundings. Only the second one I've ever seen, it was already too far away before I could snap a photo.

Although the reef top was somewhat featureless, the drop-off was another story. Subtropical thistle soft corals exploded in dazzling hues of lavender, yellow, white, orange, adorning the wall to the sandy bottom at 32 metres. Fan corals were conspicuously absent, save for a few small specimens designated to a few rocky outcrops on the sand. Although the coral was extraordinary, it was the fish life that really impressed: Deep Reef could easily be renamed "Big Fish Central! For the ensuing half hour, my camera went into overdrive.

Unfamiliar subtropical species rubbed shoulders with such familiar tropical characters as emperor angelfish and common lionfish. Swarms of basslets, locally called goldies, swarmed amongst the



only way to find it is via GPS. In order to protect the reef, no mooring lines had been established. As a result, Jon utilized a towline with a float attached to the top in order for the boat crew to monitor our progress.

Far below, the reef was easily discernible in the clear blue water. "Twenty-five metre vis!" exclaimed Jon. That, combined with the already relentless heat, was the cue everyone needed, and we were all geared up and ready in record time. The dive certainly had an auspicious



CLOCKWISE FROM LFET: Blotched fantail ray; School of glassfish; Mating Spanish dancers; School of carpet trevally

Vasco's boasts a trio of cleaning stations: one at the drop (15m), another 40m inshore (16m) and a third 70m (12m) to the north. All are a favourite manta haunt, so we hoped for an encounter. Mozambique is home to two different manta species, including the newly identified giant manta. In fact, the research identifying this separate species was carried

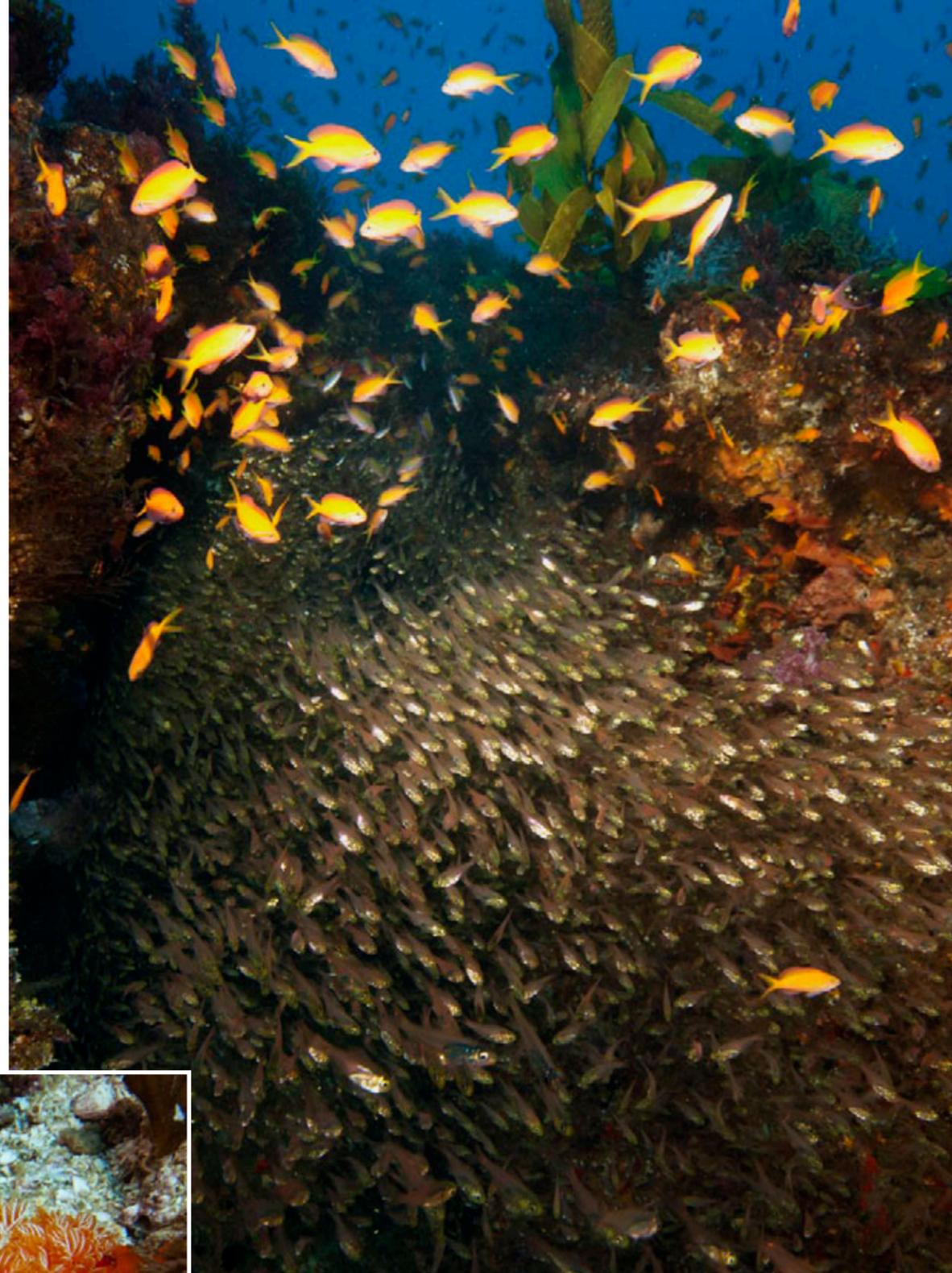
common name. Back at the surface and still buzzing, I turned to Jon. "Oh my GOD!" I exclaimed. "What an amazing dive. That honeycomb moray was the biggest I have ever seen!" Jon grinned. "Everything is bigger in Africa!"

Vasco's

Eager for more, our next destination was Vasco's, two 2km offshore and a 30-minute ride away. Much shallower than Deep Reef and half the distance from shore, Vasco's gets its name from metre and a half long anchor deeply embedded into the reef. Rumour has it that it dates from the time of Vasco de Gama, who passed through the area in the late 15th century.

out in nearby Tofo by renowned manta researcher Dr Andrea Marshall.

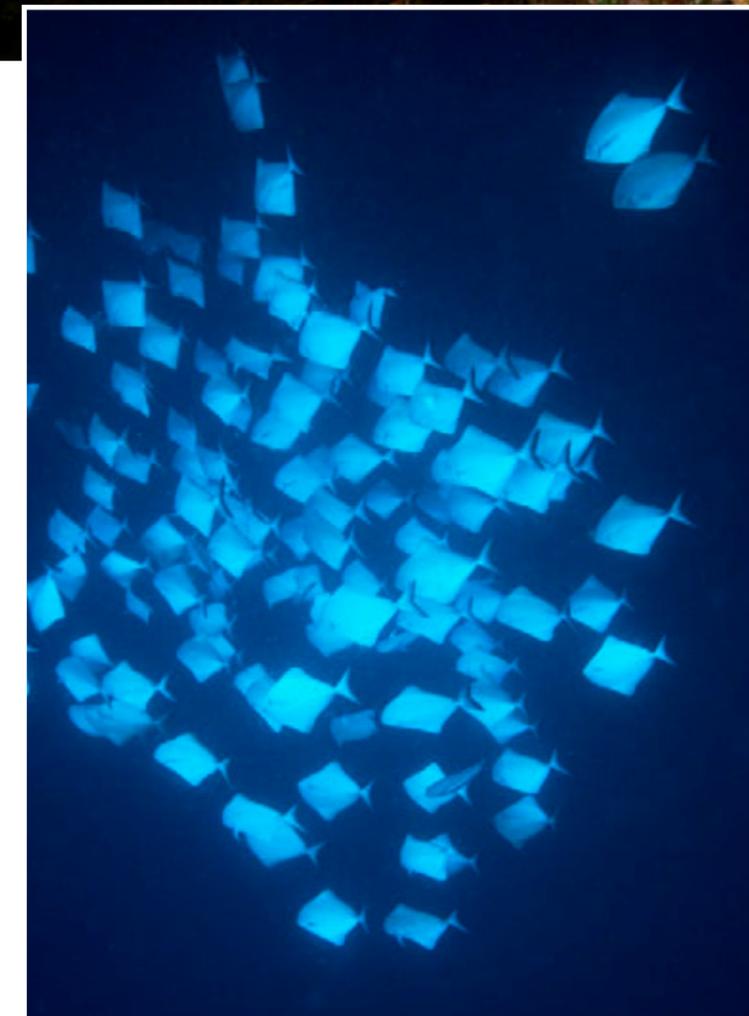
Alas, today wasn't that day, as the mantas had been absent for nearly a month. Jon theorized they had sought refuge in the cooler waters of the deeper reefs to escape the warm water temperatures. I was beginning to think my trip might prove to be one



of those "great moments in bad timing" scenarios.

Despite the absence of mantas, there was no shortage of ray action. Partially obscured by a rocky over-

hang, a massive blotched fantail ray sat immobile on a coral-encircled patch of sand. Easily two metres across, it was the biggest ray I had ever seen. By dive's end, we spotted four more, along with a spotted eagle ray and a pair of Jenkins whiptail rays. Add some whitetip sharks along with snappers, nudibranchs and a shimmering





school of glassfish interspersed with copper sweepers and it all added up to an action-packed 55 minutes!

My memory card bursting, we headed for home and the moment I had been dreading all morning: The beaching. "Hang on" Jon exclaimed as he opened both engines to full throttle and raced towards shore. Not knowing what to expect, I twisted my body perpendicular to the boat, grabbed a rope with my right hand and the metal pole above the tanks with the left. BIG mistake! Upon hitting the beach, the duck ground to a halt. I, however, kept going. Propelled forward, I flipped over, landing

on my back wedged between the tanks and the side of the boat as everyone gawped with a mixture of shock and amusement. Fortunately, the only thing hurt was pride, and I couldn't stop laughing.

Back at the resort, I quickly discovered I got a lot more than the 100-plus images on my flash card. In the rush to get ready, I forgot one very significant item: sun block. The African sun proved merciless, and by our mid-afternoon return, my hands and face resembled a freshly boiled lobster!

The remainder of the week consisted of an identical pattern, with morning dives on the outer reef followed by afternoon dives inshore. As a result of the prodigious fish life, my wide-angle lens remained firmly affixed to the camera. Each morning, we visited a different site within

the deep reef system including Dean's Drop, Arcadia and Yogi's Den. Each bore similar characteristics, with coral shrouded walls and a spectacular array of large creatures. The mantas, however, remained maddeningly elusive.

Several dives at Vasco's revealed a wide range of creatures both big and small, from mating Spanish dancers, morays and octopus to green and loggerhead turtles, whitetip sharks, rays and potato groupers. On one dive, the water was literally pulsating with legions of jellyfish. Fortunately, they were on the non-stinging variety.



Area 51
A pair of dives at nearby Area 51 proved equally prolific. At 1.2km in length and named after the American UFO hotspot,

CLOCKWISE FROM ABOVE: Green turtle resting on the reef; Potato bass; Zavora reef scene; Jellyfish



CLOCKWISE FROM LEFT: Diver and reef off Zavora; Quadricolour chromodoris pair; Manta; Purple-edged ceratosoma; Guitar shark resting on sea floor

it boasts flying saucers of a different kind. A shallow 6m cleaning station is a favourite haunt of mantas, which have been known to circle the flat-topped pinnacle in formation while waiting for a space to be cleaned. In theory, anyways as there were still none to be seen. They had been around, however.

On one dive, Jon plucked something from the bottom and finned over to show me. At first, I didn't understand the greyish chunk's identity but through a combination of creative mime coupled with Jon's mirthful expression, I quickly realized

remotely close. Some rapid-fire tank banging by Jon caught my attention. Ahead, on the periphery of vision, I could barely discern a colossal silhouette before it vanished in the gloom. Back on the surface, Jon informed me this was a hulking three-meter-long brindle bass.

After the tantalizing glimpse at Area 51, we

what it was: manta pool!

Descending to a vast sandy area at 20m, we were treated to a rare sight—a two-meter guitar shark. An undersea oddball looking like a curious amalgamation of shark and ray, it was extremely shy and bolted before we could get

were rewarded with a fantastic guitar shark encounter the next day at Deep Reef South. Unlike the previous skittish individual, this specimen proved quite tolerant, holding its ground as it rested on the sand at 32m. Five of us settled on the sandy bottom, camera shutters firing furiously. Once the others moved



off, I decided to move closer. Scarcely believing my luck, I inched forward until the creature's pointy snout was brushing my domeport! After a few more shots, it had enough and languidly swam off, settling down a few metres away.

That wasn't the only surprise Deep Reef had to offer. While swimming into a distinctly chilly thermocline at 28m, Manuel gestured excitedly ahead. Out of the gloom, a distinctive pair of silhouettes were heading our way. Mantas! Scarcely able to believe my eyes, the graceful giants came to within metres of our euphoric group. Literally poetry in motion, they swam alongside us for ten spellbinding minutes. Although they weren't the giant species, a manta is still a manta and my drought had finally been broken.





Sponge City

After a week of shooting wide angle, I was eager for some macro and Jon had just the place. Only a few kilometres from shore, Sponge City was Yara's favourite nudibranch location. Entering the water, it didn't take her long to find some photo subjects. A large flat area at around 16m was

home to abundant purple-lined nembrothas, one of which was in the process of consuming an ascidian. Nearby, a purple-edged ceratosoma added a vivid splash of colour to the drab undersea vegetation.

I soon happened across the site's distinguishing feature—a large cleft in the seabed wide enough for a diver to swim



Mozambique

through. Descending to 20m, I finned through the narrow opening, careful not to damage any of the corals lining the wall. A crevice revealed a pair of quadricolour chromodoris nudibranchs. However, getting a shot proved to be the undersea equivalent of playing Twister.

Standing on the sandy bottom with less than half a metre on either side, I attempted to get some images, which quickly proved easier said than done.

Totally engrossed with my photography, I heard beeping, which I assumed to be the conservative computer of one of the other divers. After shooting a while longer, I glanced at my computer and my eyes bulged. That had been my own computer and I was now into deco. Make that a LOT into deco! The nudibranchs were quickly abandoned as I ascended



CLOCKWISE FROM FAR LEFT: Purple-lined nembrotha; Geometric moray eel; Reef scene at Zavora; Coral trout



for my safety stop, which ended up being 15 minutes (my new all-time record).

As I sheepishly explained my predicament to Yara via hand

signals and perplexed expressions, I could discern her laughing into her regulator. With ample time to spare, I kept myself amused by photographing the endless parade of jellyfish swimming past. Back on the boat, I sheep-



Great Wall South

On my last dive at Zavora, Murphy's Law made an unwanted appearance. For our inshore dive, Jon had decided on Great Wall South. With my laptop crammed with wide-angle images, I switched to macro. Minutes into the dive, I was scouring the wall for macro subjects. I had just happened upon a scorpionfish when a frenetic bout of tank banging heralded the arrival of something significant. Whirling around, my stomach sank. Cruising right in my direction was a leopard shark. Photographically helpless with my macro lens, it cruised by at arm's length. Curses!

Tofo

After a superlative week, it was time to bid adieu to Zavora and move on to my next destination. Situated on the Ponto do Barra peninsula 22km from Inhambane, the small town of Praia do Tofo—or simply Tofo—has emerged as one of Mozambique's premier tourist destinations. Boasting an imposing sweep of Indian Ocean beachfront, Tofo (pronounced *tofu*) is home to a broad array of beach villas, restaurants, Internet cafes and dive centres. Compared to the wilds of Zavora, it might as well have been Waikiki Beach.

Arriving late in the afternoon, Tofo Scuba was a bit of a shock after my week in the wilderness. Established a decade ago, it is a large operation with an extensive staff, most of them South African. My accommodation was right next door at the Aquatico's Beachside Casitas. The roomy interior featured a kitchenette and, best of all, 24-hour electricity and multiple plugs. For dinner, I ambled over to Dino's Beach Bar, a Tofo icon complete with internet café. With an expansive



CLOCKWISE FROM FAR LEFT: Barracuda school; Blue-spotted stingray; Bigeye trevally; Surgeonfish

Mozambique

patio boasting great views of the beach, I tucked into a flatbread-style pizza watching the warm hues of late afternoon meld into dusk.

The next morning, I walked the few scant metres to the dive shop for breakfast. I met up with owners, John and Nikki Pears, who had just arrived from South Africa. Over coffee, John gave me a bit of info on the area

and its most famous undesea residents—the whale sharks. Research by Dr Simon Pierce of the Foundation for the Protection of Megafauna has revealed that Tofo has “the largest number of reported year round whale shark sightings in the world”.

Just to the south of Tofo's bay, an offshore area approximately one half-mile wide and four miles long, is



ishly apologized to everyone and vowed it wouldn't happen again (on this trip, anyway).

On my last evening, Jon drove up to the lighthouse on a nearby hill. Although he said the keeper might not let us in, Jon was armed with a secret weapon—a couple of cold Manicas. The lighthouse keeper's stern countenance quickly melted into a smile and he opened the locked door. We ascended the winding staircase to the top, which offered commanding views of the entire area.

Mozambique

grouper approached anticipating a handout. The fish were extraordinarily tame and had obviously been fed in the past. Although fish feeding has long been discouraged, it sure doesn't stop them from trying! A massive outcrop riddled with numerous outcrops and spires of rock, Hogwarts lived up to its namesake. Green tree corals sprouted from the walls while goldies swarmed in abundance along with semicircle angelfish, longnose butterflyfish, blue-banded snappers and white-barred rubberlips.

Chamber of Secrets

Situated smack dab in Whale Shark Alley, our next stop was The Chamber of Secrets. Boasting numerous swim-throughs and caves, the horseshoe-shaped formation featured walls ascending 6-8m from the sandy bottom. Unfortunately, surface conditions created an underwater maelstrom of sediment, wreaking havoc on the visibility.

As photography would be virtually impossible, I decided to just enjoy the dive. Lots of interesting sponges adorned the wall, while rocky overhangs harboured aggregations nudibranchs, red and white striped giant squirrelfish and red soldierfish. A large porcupinefish peeked from a crevice while a sandy patch below housed a well-camouflaged crocodilefish.

Enroute to Tofo, we kept an eye out for whale sharks, but it was too rough to snorkel even if we saw one. At the dive centre, the news was ominous. Conditions were expected to deteriorate over the next few days and diving prospects looked grim. The culprit was a cyclone over Madagascar. Although not heading in our immediate direction, it was already affecting surface conditions over an enormous swathe of coastline.

Giant's Garden

With conditions deteriorating, John wanted to get me out for one last dive at nearby Giant's Garden. The

Whale Shark Alley—a prime aggregation area. As they are often encountered travelling to and from the dive sites, stops are often made to snorkel with these gentle giants. Just to be safe, I fitted a second housing fitted with a domeport. Bring on the whale sharks!

Hogwarts

My first day at Tofo proved to be Harry Potter day. First up was Hogwarts—a 30-minute boat ride from the dive shop. Having mastered Zavora entry procedures in, I assumed Tofo would be no different. Wrong! Surface conditions had worsened overnight, making Zavora's sur-

face chop seem like a millpond by comparison. Also, due to a lack of shelter, the boat had to be put in right on the crashing surf. Dive guides, Darren and Damien, ensured everything ran smoothly and everyone got on board without incident.

A quidditch broom would have been a preferable mode of transport, as the ride

turned out to be pretty rough. Massive waves lashed the headland, making me grateful the site was a reasonable distance offshore. As in Zavora, locating the site was achieved via GPS. After several passes, the boatman moved into position and everyone entered the water.

Soon afterwards, a pair of hefty potato



day before, five mantas had been spotted there, so my fingers were crossed. With Darren and Damien as my able guides, we ventured into the surf. "This isn't so bad," I thought to myself. Moments later, my newfound optimism was quashed, as a particularly large wave sent me temporarily airborne. Fortunately, I had been tightly grasping the rope and stayed on board.

Continuously buffeted by big waves, steadying the boat proved to be a challenge, but we did a backward roll and quickly descended. In addition to visibility hampered by the conditions above, there was also some current to contend with. Their polyps extended, green tree corals scooped passing nutrients while Damien pointed out a pair of slipper lobsters hiding at the bottom of a barrel sponge.

Arriving at our destination at around 20m, we waited for the star attraction. Peering into the gloom, I barely discerned a pair of mantas cruising off the wall, but was too far away for photographs. Unfortunately, our bottom time elapsed far too quickly, and

we had to ascend with no further sightings.

All was not lost, however. A large cleft in a rock face revealed a robust lobster. Boldly regarding me with beady eyes, I was able to get close enough so its twitching antennae grazed my domeport. Another free-swimming honeycomb moray obligingly posed for some photos, while a school of big-eye trevalley made several close passes. It was at that point I realized my strobes were only firing intermittently. Fortunately, some strategic cord jiggling ensured I was able to get some images. Such are the joys of water and electronics.



The dive had one more surprise in store. As we hovered in our safety stop, a devil ray appeared from the gloom, making several curious passes around our elated group. Then without warning, it rocketed to the depths below with an incredible burst of speed. My ray tally was now up to six species—a record for one trip.

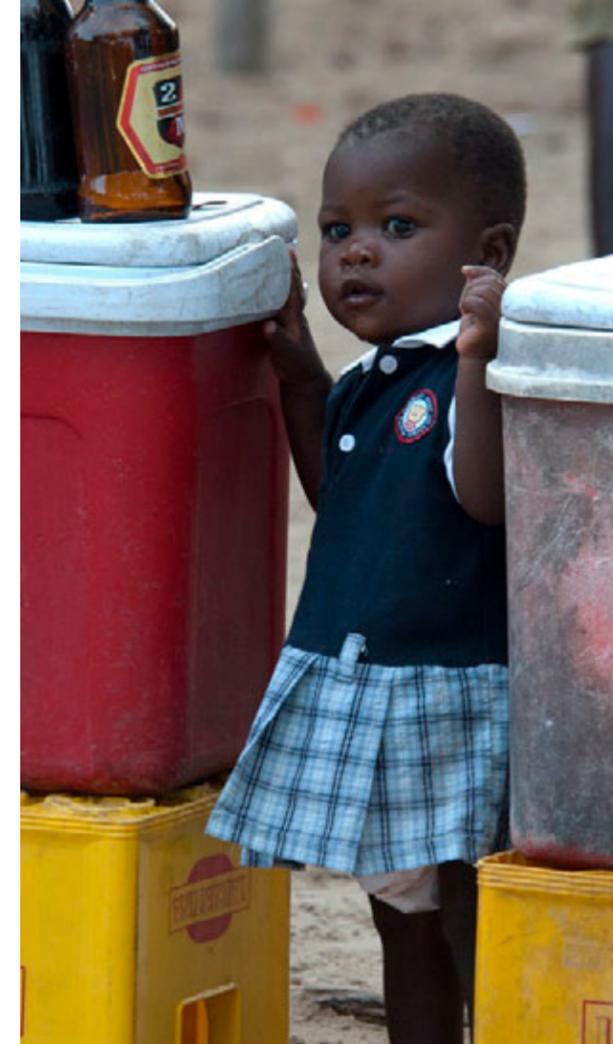
With the day's diving scuttled, I had a bite to eat at the dive centre's restaurant. While waiting for my food, I met Ritchie Van Wyck,



a young and extremely talented South African videographer based in Tofo. We watched some of his work

in the dive centre office, and it was extraordinary. Along with whale sharks and mantas, it included footage of

CLOCKWISE FROM ABOVE: Reef at Hogwart's; Devil ray; Lobster and sea urchin on reef; Honeycomb moray eel



Guest house at Tofo Lodge (above); Tofo Scuba (left) overlooks the sea; Scenes from the marketplace; Smells of barbecue chicken and hotdogs (far right) drift through the air of the marketplace



a small-eyed sting-ray, which, at 3m, is the world's biggest. Watching all the wonders on screen and not being able to dive bordered on cruelty!

Later in the afternoon, I wandered over to the photogenic local market, situated across the road from the beach. A perpetual hive of activity, vendors tempted passers by with a wide array of colourful batik clothing along with t-shirts, woven baskets and various bric-a-brac. Chicken, fish and sausages sizzled on grills, while market stalls were crammed with an array of fresh fruit, vegetables cashews and basic groceries. As my

Portuguese was non-existent, a few gestures procured me a big bag of mangoes and some ice-cold Manicas to take back to the room. One of the real joys of Tofo is its safety, being perfectly safe to walk around day or night.

The next day brought unwelcome news. With the typhoon lingering it appeared diving would be out for the remainder of the week. However, when one door closes another opens. John suggested we dive the lagoon at the

northern tip of the peninsula. According to Tibeia—the staff's resident macro fanatic—its sheltered waters were a haven for critters. Sold!

The lagoon

Transport was via a car and a decidedly battered land rover and with everyone aboard, we set out on the 30-minute drive. Pulling into a parking area near our destination, the car had to stay behind, as the road ahead (or lack

thereof) was only suitable for the land rover's four-wheel drive. The staff loaded our gear to transport it to the water's edge before coming back to pick up the remainder of the divers.

After the week's adrenaline-pumping entry procedures, the lagoon proved refreshingly sedate. The sheltered waters were quite calm, with scarcely a hint of wave action. The maximum depth? No more than three metres.

After gearing up on the beach, all that

was required were a few steps to the water's edge. As the lagoon was shallow, it was a bit of a swim to the deeper water. While it certainly won't win accolades in the beauty department, the lagoon's sand-covered bottom proved to be a macro mecca whose tangles of seagrass housed a bewildering diversity of strange creatures. Perfectly mimicking their surroundings, filefish hovered motionless amid the seagrass, while one small clearing revealed a diminutive



snake eel peering from the sand. With bodies adorned with an array of bizarre spines and protuberances, an array of blennies remained immobile only to dart off when approached too closely.

A plethora of sandperch patrolled the sandy areas along with legions of sea urchins. Crabs were everywhere, which was a rather surprising sight during daylight hours. They also appeared to be a prime entree on the local menu, as partially consumed remains were strewn everywhere by unseen diners. At one point, Damien motioned me over to a cluster of weeds. Closer inspection revealed a dark brown seahorse stretched out on the sand. In true sea-

horse fashion, it always looked the other way as I tried to photograph it. To counter the dilemma, Damien swam up to it. As it turned away and faced me, presto, I got my image.

We headed back to the lagoon the following day, and it didn't disappoint. Although things started slowly, the critter parade picked up during the dive's second half. However, there were some hazards to contend with. Retreating slowly to frame a sandperch, I inadvertently blundered into a cluster of urchins. As I was wearing open toed fins, my big toe scored a direct hit. Fortunately, no pieces broke off inside, but the ensuing dull ache was a reminder to be more vigilant of my surroundings.

Seeing another diver intently photographing, I approached to discover a tiny octopus peering out from the confines of a shell. It was easily the smallest I'd ever seen, barely larger than a fingernail. Nearby, I discerned a blenny peering from the opening of a green vase-shaped "thing". Boasting a horned, pink-tinged head with puckering lips, the nervous fish quickly retreated into its odd looking domicile. Moments later, it popped out for another peek. Our game of hide and seek continued until I was able to obtain some frame-filling images. I later discovered the "thing" to be a horse mussel.

Glancing at my computer, I realized our allotted hour was nearly up, so I turned

ZAVORA MARINE LAB
The Zavora Marine Lab was established in 2009 to promote and facilitate research and conservation in southern Mozambique. Under the direction of B.Sc. M. (Ecotourism) Yara Tibiriçá (Iemanjá - Marine Conservation), the laboratory works in partnership with Mozdivers Zavora, Zavora Lodge and the Oceans Research.

Since its inception, the lab has developed vital research for the region and raised environmental awareness through a series of educational programs for both visitors and local communities. Zavora is one of the few places where both species of manta rays (*Manta birostris* and *Manta alfredi*) can be seen year-round and offers the unique opportunity to study a marine environment that has had minimal to no impact from recreational diving activities.

A number of projects are currently being developed to study manta populations, divers' impacts on mantas and their cleaning stations, diversity and distribution of nudibranchs, reef monitoring, socio-economic studies on dive tourism and the relative abundance of migratory humpback whales. Studies to date highlight the diversity of Zavora's marine life. Over 70 individual manta rays have been catalogued along with 83 nudibranch species (including a few undescribed species) and 214 fish species. In addition, four reef monitoring surveys have been completed.

Visitors wishing to learn more about marine science and the area's marine life may apply for a month-long internship program (limited space and CV required) or participate in a marine conservation scientific dive course focusing on manta rays (15 days of theoretical and practical field work, this program is exclusively for groups from six to eight people). ■

CLOCKWISE FROM TOP LEFT: Filefish displays ingenious camouflage blending into its surroundings; Snake eel pokes head out of sand; Crab; Dwarf lionfish



TOP LEFT TO RIGHT: Octopus eating crab; Seahorse; Lyre-tail sandperch; Porcupinefish

to swim for shore. At that moment, a peculiar shape caught my eye amid the undulating seagrass. Gelatinous in appearance, its spindly body bore a series of large flaps adorned with hair-like filaments. Perplexed, I realized this was no plant. Whatever it was, it was moving. Suddenly, its transparent "head" swelled disproportionately and proceeded to envelop some plant matter on the substrate. What on earth was I looking at? Back at the dive centre, the answer was soon revealed. It was a nudibranch—specifically, a *Melibe fimbriata* and a new species to add to my checklist.

Blenny in horse mussel



TECH DIVING

With the majority of its reefs beyond 30m, Zavora offers a plethora of opportunities for deeper and exploration diving. Previously, tech diving in Southern Mozambique had been limited to groups bringing all their own equipment, including compressor and a chartered boat. Mozdivers Zavora now offers technical diving and training through IANTD, opening up another realm of pristine, sites not yet dived.

An absolute must area is the wreck of the *Klipfontein*, a 160-meter-long cargo and passenger ship built in 1937 in Rotterdam for the Holland Africa line. On 8 January 1953, while enroute between Cape Town to Rotterdam, the vessel struck an object off the coast of Zavora and sunk within three hours.

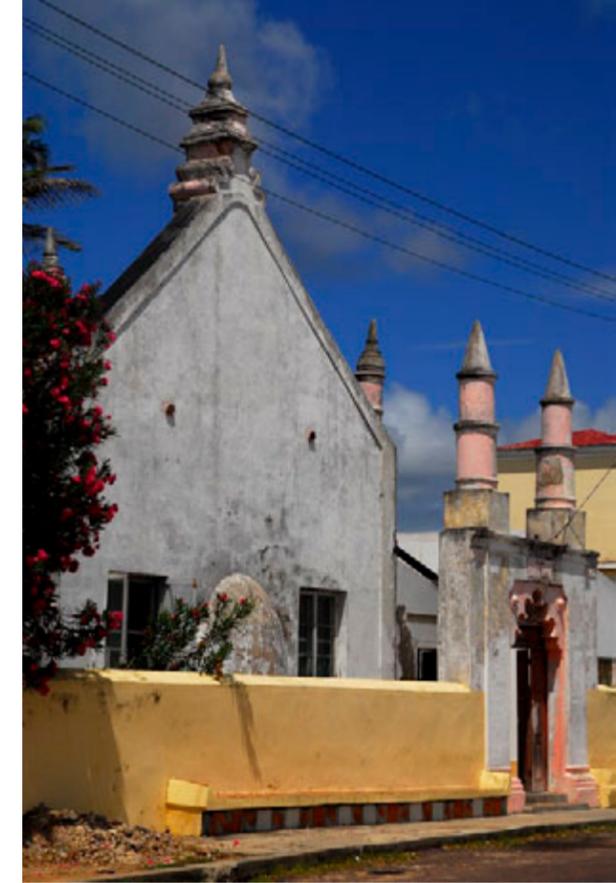
Situated six kilometers off Zavora point, the vessel rests on a sandy bottom at 53m. The stern remains largely intact, lying on her starboard side and separated from the rest of the ship. Most of the hull is inverted or "turned turtle", lying on her decks, with the bow broken off and pointing towards the surface. Ascending to 36 meters in places, the wreck and is surrounded by a debris field of remains and artifacts.

Much controversy surrounds the ves-

sel's sinking, as eyewitness testimonies, the captain's log and the findings of the tribunal that followed contain conflicting accounts. The initial theory, concluded by the tribunal and at least one passenger account, is the vessel struck charted rocks about one mile off shore and drifted to her present position. This is now disputed, as the rocks in question are part of a very long reef sloping down from six to more than 20 metres. A ship traveling at cruising speed would be more likely to run aground rather than drift away after a collision. The most popular theory is that the vessel struck a 'dead' German U-Boat floating just under the surface. However, with no conclusive evidence, the sinking of the *Klipfontein* remains shrouded in mystery.

Today, the vessel has since become a vibrant artificial reef, home to lush whip and bush corals and a thriving fish population. Highlights of a dive include massive resident brindle bass the size of a small car, the huge port propeller and a chance to see mantas. Large aggregations of trevally, kob and barracuda are routinely encountered over the wreck while Zambezi and spinner sharks have been observed both on the wreck and during the blue water decompression stop. ■





CLOCKWISE FROM LEFT: Tubastrea corals; Scenes from Inhambane street life; Inhambane Mosque (top right); Inhambane Cathedral; (bottom right); Tiny octopus in shell (inset below)

Inhambane

With diving sadly finished, John arranged a city tour of Inhambane for my last day. A 20-minute drive from Tofo, Inhambane is one of the oldest settlements on Mozambique's east coast, having been a major port for Muslim

and Persian traders since the 11th century. A permanent Portuguese settlement was established in 1534 and became the site of East Africa's first Jesuit mission in 1560. Legendary explorer Vasco da Gama stopped by in the late 15th century, proclaiming it Terra de Boa Gente or 'Land of the Good People'.

A mixture of old world Portuguese

and Muslim culture, the sleepy provincial capital of 50,000 is renowned for its colonial and art deco architecture. The three-hour tour took in a variety of attractions including the museum, train station, a pair of mosques and the historic Cathedral of Nossa Senhora de Conceicao, which dates from the late 18th century. The area adjacent to the train station was somewhat eerie. Sitting astride tracks overgrown with weeds, decrepit steam locomotives and rolling stock sat where they were abandoned many decades ago.

Although my Tofo visit did exactly go according to plan, it was nevertheless highly enjoyable. It's easygoing tropical vibe combined with tantalizing glimpses of its undersea wonders had me eager to return. In the end, Mozambique proved to be nothing short of a revelation. During my two-week stay, I observed an array of creatures I'd always dreamed of. With its winning combination of fantastic diving and vibrant culture, it's a destination I look forward to experiencing again. Besides, the whale sharks will be waiting. ■



fact file

Mozambique



SOURCE: CIA.GOV WORLD FACTBOOK

History After nearly five centuries as a Portuguese colony, Mozambique gained independence in 1975. This was followed by large-scale emigration, a severe drought, economic dependence on South Africa, and a prolonged civil war which thwarted the nation's development until the mid 1990s. In 1989, the ruling Front for the Liberation of Mozambique (Frelimo) party formally abandoned Marxism. The following year, a new constitution provided for multiparty elections and a free market economy. In 1992, a peace agreement negotiated by the UN between Frelimo and rebel Mozambique National Resistance (Renamo) forces ended the violence. After 18 years in office, Joaquim Chissano stepped down in December 2004 and Mozambique experienced a delicate transition with his elected successor, Armando Emilio Guebuza, who promised

to continue sound economic policies that encouraged foreign investment. In October 2009, he was reelected to a second term. But, the elections were tainted by voter fraud, dubious disqualification of candidates, and Frelimo use of government resources in campaign activities. This resulted in the removal of Mozambique from the Freedom House list of electoral democracies. Government: Republic. Capital: Maputo

Geography Mozambique is located in Southeastern Africa. It borders the Mozambique Channel, between South Africa and Tanzania. Coastline: 2,470km. The terrain is mostly coastal lowlands, uplands in the interior, high plateaus in the northwest and mountains in the west. Lowest point: Indian Ocean 0m. Highest point: Monte Binga 2,436m.

Climate Mozambique's climate is tropical to subtropical. Natural hazards include severe droughts, destructive cyclones and floods in the central and southern provinces.

Environmental Issues Increased migration to coastal and urban areas have had adverse environmental consequences brought about by a long civil war and recurrent drought in the back country. Other issues include desertification and pollution of surface and coastal waters. There is also a problem with elephant poaching for ivory. The nation is party to: Biodiversity, Climate Change, Climate Change-Kyoto

Protocol, Desertification, Endangered Species, Hazardous Wastes, Law of the Sea, Ozone Layer Protection, Ship Pollution, Wetlands.

Economy Mozambique was one of the world's poorest countries at the time of its independence in 1975. Exacerbating the situation was Socialist mismanagement and a brutal civil war from 1977-92. In order to stabilize the economy, the government embarked in 1987 on a series of macroeconomic reforms. This action in addition to donor assistance and political stability since the multi-party elections in 1994, led to dramatic improvements in the nation's growth rate. Despite these gains, the majority of the population remains below the poverty line and the country remains dependent upon foreign assistance for more than half of its annual budget. Subsistence agriculture is the main source of income for the vast majority of the country's work force. Smallholder agricultural productivity and productivity growth is weak. Natural resources: coal, titanium, natural gas, hydropower, tantalum, graphite. Agriculture: cotton, cashew nuts, sugarcane, tea, cassava (tapioca), corn, coconuts, sisal, citrus and tropical fruits, potatoes, sunflowers; beef, poultry. Industries: food, beverages, chemicals (fertilizer, soap, paints), aluminum, petroleum products, textiles, cement, glass, asbestos, tobacco.

Currency Meticals (MZN). Exchange rate: 1USD=26.70MZN; 1GBP=43.31MZN; 1AUD=27.17MZN; 1SGD=21.98MZN

RIGHT: Location of the Mozambique on map of Africa
FAR RIGHT: Location of Inhambane on map of Mozambique



Population 22,948,858 (July 2011 est.) Note: higher than average death rates due to AIDS. Ethnic groups: African 99.66% (Makhuwa, Tsonga, Lomwe, Sena, and others), Europeans 0.06%, Euro-Africans 0.2%, Indians 0.08%. Religions: Catholic 28.4%, Muslim 17.9%, Zionist Christian 15.5%, Evangelical Pentacostal 10.9%, Anglican 1.3%, other religions 7.2%, no religion 18.7% (2007 census). Internet users: 613,600 (2009)

Language Emakhuwa 25.3%, Portuguese (the official language) 10.7%, Xichangana 10.3%, Cisena 7.5%, Elomwe 7%, Echuwabo 5.1%, other Mozambican languages 30.1%, other languages 4% (2007 census)

Health Issues There is a very high degree of risk for food or waterborne diseases such as bacterial and protozoal diarrhea, hepatitis A, and typhoid fever; vectorborne diseases such as malaria and plague; water contact disease such as schistosomiasis; and animal contact disease such as rabies (2009)

Decompression Chambers

National Hyperbarics
Cape Town, South Africa
Nationalhyperbarics.co.za
Hyperbaric Medicine Centre, Durban, South Africa. 24 Hour Phone: 031 2685000

Websites

Mozambique Tourism
www.mozambiquetourism.co.za



Blenny in horse mussel



Bahamas

— *Diving the Islands*

Text and photos by Charles Stirling

The Bahamas are an English speaking island nation known to most of us, but for very diverse reasons. For many living in Florida or nearby, it's a location for a quick day or weekend break for beach or casino. For Europeans, it's an offshore financial and investment capital. To many, it's the location for films and TV programs that feature water and sea, such as the *Pirates of The Caribbean*, *The Spy Who Loved Me*, or even the TV series, *Flipper*, plus many others. For divers, we think of Blue Holes and technical dives or one of the best places to see sharks.

Dive master holds a Caribbean reef shark at UNEXSO showing it in its state of stupor

Are the Bahamas a location worth going to as a visiting recreational diver? From an English diver's perspective, with the multitude of wreck dives around our UK

coast, the Mediterranean a short flight away, the Red Sea easily accessible, YES I still think the Bahamas offer something worth going for. Of course if you are in

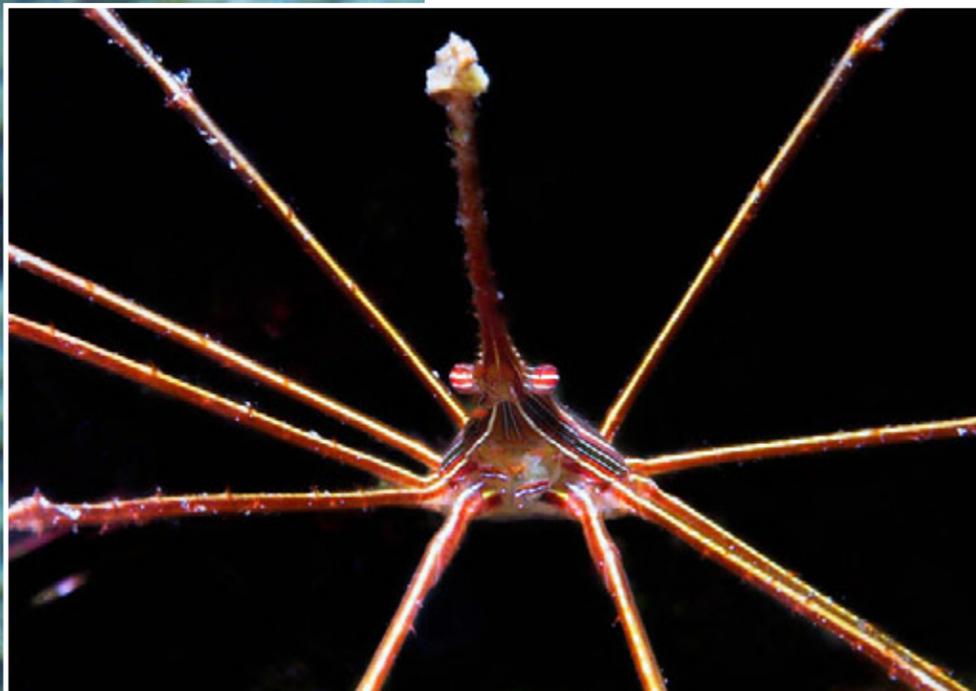
North America the yes decision should be even easier. They would be a good place to learn to dive with the family yet still offer a lot to experienced divers.

One of the reasons for the increasing use of the Bahamas for filming is of course the good diving conditions, so is that enough to attract sports oriented

divers? Without rivers visibility is excellent, water temperatures are tropical or near. The Blue Hole diving rapidly becomes one for technical or even very technical

dives with backup teams and lots of equipment, but some of this diving is possible and open for the recreational diver. Shark sighting is easily possible either naturally or





on specialist shark dives. Besides these two big attractions are the absolutely stunning great walls, many wrecks, and a big diversity in coral reefs with the world's third longest barrier reef all giving divers plenty to see. Along with this it's not overly crowded and can be very personal.

Diving in the Bahamas can of course be done from a variety of liveaboard boats often out of Florida as it's so close. This gives a good all American experience, easy multiple dives a day and depending on the trip either a single or multiple objectives. It does mean being on a boat most of the time but with some of the large luxury ones it's not necessarily in cramped quarters. Liveaboard trips also start from Nassau, Grand Bahama and Exumas. I've not done this, maybe another trip another time. I do enjoy time for exploring land based opportunities, meeting local people and having the variety that can come from being firmly planted on land even though I wasn't able to do much of this because of time constraints, but the theory is present.

Types of dives

Sharks always seem high on most diver's "want to see" list. Some consider the Bahamas as one of the world's best places to have that introduction or even an extensive

exposure. The tourism attraction benefits of sharks mean many operators offer a "shark dive" with sharks being fed. OK, we now have controversy! This is a touchy subject as many believe that divers should never interact or in any way influence any animal on any dive, while others are happy to spearfish or collect shellfish. It's the "leave only bubbles" debate. There is also the controversy of possibly altering behaviour by associating people with feeding which has produced a ban on shark feeds

and even fish feeds in some locations. How much should people "interfere" with natural system? As a diver, environmentalist and photographer I try not to disturb the environment, we are all told / trained not to touch when diving, to leave only bubbles (or spend the money on a rebreather and don't even do that). Most sharks are not going to be interested in being near divers, they are shy, we are not food, and they are wide ranging, so, worldwide, attracting them into view is done with chumming or feeding of

LEFT TO RIGHT: Nassau groupers help to keep reefs healthy by controlling smaller fish but still want a clean occasionally. One problem for these important fish is they are tasty to humans; Yellowline arrow crab; Soft corals are plentiful on some sites, often as individuals in small patches not as great masses



Shark taken along the line of divers at UNEXSO to be seen and touched (left); Shark feeding site but not a feeding dive and the sharks ignored divers (below)

site on the bottom. We were lined up kneeling on the sand shoulder to shoulder with our backs to a section of wreck, OK, an old decompression chamber, with hands kept out of the way. Once settled then the chain mail clad shark feeder opened a container of fish to hand feed one fish at a time to any individual shark that was closest. This was started first in front of the whole group, as the shark temperaments were judged as OK the feeding moved closer along the length of the line for each diver. Yes, sharks would be everywhere coming into the feed just overhead or along in front. The sharks made direct contact with the person feeding being rather gentle in taking the food from her hand.

After the food was gone she put her gloved hand on one of the smaller shark's nose which made it go into a quiescent, almost stupor like state and this animal was gently held and taken along the line for each visitor to touch on

the back. Talking to some of the divers after, all agreed this was great and one experienced diver offered the comment that the feed then touching a shark was the highlight of all his diving experiences. Previously he had been terrified by even the thought of a shark. This quiescent behaviour isn't understood but is well documented. The sharks having been fed, contacts made, the divers were free to look for sharks teeth in the sand for another 10 minutes before being led back to the surface with the safety diver. The woman shark feeder, the official photographer and I stayed down longer and in these calm conditions she was able to rest one of the larger sharks in her lap for nearly 6 minutes. Handling the sharks also meant fish hooks and sometimes ectoparasites could be removed.

So is the shark behaviour modified with this interaction? Doing a dive in the same area without the feeding some

some sort. It's a controversy that some see as very important, wanting to stop the feeding' while others see it as a tsunami in a tea cup. Whichever, it is done here.

Yes, the right dive site in the Bahamas and you will see sharks going about their business off in the distance. Occasionally if you can be very stealthy its possible to get a bit closer. Getting really close I did shark feed dives with 3 of the popular operators. First, all 3 were very safety conscious with visiting divers. They were aware of how it might change behaviour so amounts and frequency of food was limited and the food was natural, i.e. fish. None fed enough to be a significant portion of a shark's normal daily needs. One of the big things they are concerned about is the plummeting numbers of sharks worldwide and how incredibly important it is to bring this awareness

to the public. Each dive operator had slightly different approaches and methods to their shark feeds, but all had sharks to see up close. I ended up thinking these dives were a worthwhile introduction for many so I rather broke my own rules. Actually they were great fun and educational, you would really be missing a lot if not going on at least one of these dives.

Shark Dives

Sharks and fish do inevitably modify behavior when fed; they will learn the sound of a boat or divers with a pavlovian response to find food. How important is this, will it increase their chance of being caught by fisherman or be a hazard to us? Does the increased interest from divers seeing them outweigh the changes. Shark feeding in Hawaii was banned in 2002, now divers are not

aware of them as they aren't frequently seen so interest is lost for many. The cliché of "out of sight out of mind" could be appropriate.

UNEXSO wants to demonstrate that sharks are not wanton killers

The most hands on and interactive was UNEXSO, Underwater Explorers Society, on Grand Bahama who use a site called "Shark Junction". After a short boat trip a thorough briefing was given which covered safety and organisation of the dive. They then went on to place a lot of emphasis on how they want to demonstrate that sharks are not an automatic menace to divers and the need for divers to be ambassadors spreading the word that sharks are not wanton killers.

The dive starts with all entering the water about the same time to follow a safety diver all together down to a sandy





Shark encounter with Stuart Cove's (left); Small Hope Bay shark encounter with a more hands off approach still had plenty of sharks up close and personal (below)

short but still to an area away from much of the other diving, the site was again a sandy one near an area with patch coral reefs and deep drop off. After the briefing and entering the water together divers were organised in pairs behind small mounds of rocks in a circle but with space between buddy pairs. The food, fish, was lowered in a hinged lidded steel box for the shark feeder to spear out individual fish to feed to an appropriate shark. As conditions were judged safe this was then done in front of each buddy pair allowing a photographer to take pictures of a swirling mass of sharks around each pair in turn. Here sharks could easily move between as well as above the divers so close encounters were frequent and from multiple directions. At the finish a short

time was allowed for tooth hunting before the group was escorted back to the boat.

Diving this site without a feed in progress sharks were around but not interested in divers. During the feed a second boat with snorkellers was stationed a distance away but close enough for them to watch and the sharks weren't interested in this.

Different approaches, but all three operations provided a good number of sharks, predominately or all being Caribbean Reef sharks, which might be a bit seasonal, to be seen up close (one nurse shark had turned up to play with the feed tube at UNEXSO). These sites had been chosen as near deep drop offs where the sharks would normally be found and away from other activity. Feeding in these ways didn't appear to be detrimental to either the sharks



sharks were present but none would venture closer than I would have expected, i.e. they frustratingly kept their distance. It was also noted that the number of sharks which turn up at the feed varies and they are not always the same ones. So this population of Caribbean Reef sharks maintained at least a semblance of normal behaviour.

Small Hope Bay Lodge

—Andros Island didn't want to associate divers with food.

At the opposite end of the spectrum on shark feeds Small Hope Bay Lodge, on

Andros Island, does fewer feeds, does them at a location some distance from their other main dive sites and has no direct interaction. They keep the site secret, even to the point of having the permanent buoy tied below water so fisherman don't target the area. The divers are organised again on a sandy area this time in a semicircle. When all was settled with the divers a frozen ball of fish was lowered on a steel rope stretched tight between a bottom ring and top buoy so sharks helped themselves as the fish ball melted. This kept the divers at a moderate distance from the feeding but sharks would

still skim over the top and past the divers. Once the fish was gone the sharks dispersed but could still be seen around the area while the divers went looking for lost sharks teeth in the sand.

Stuart Cove's Dive

—Nassau/Paradise Island wanted divers to have a good view of sharks.

Somewhat between the first two in approach, maybe with a bit more showmanship, they wanted to have divers see sharks up close but without the interaction of UNEXSO. The boat ride was



Large hard corals can be seen even on relatively shallow dives and without a wetsuit for warmth, Pagoda Reef, Exuma (left); Sea fans near the top of the reef at Hole in the Wall, Cat Island (below)

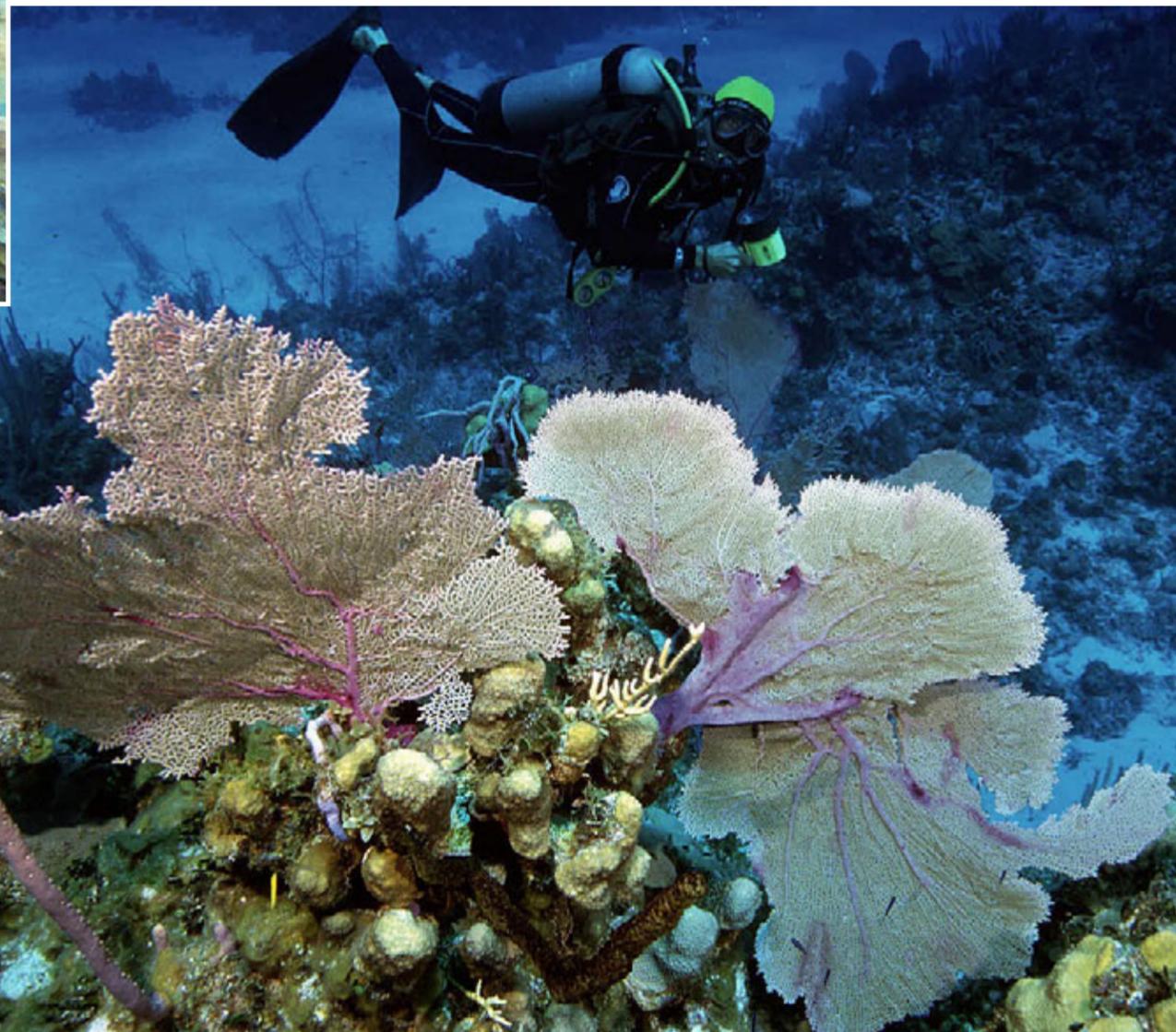
invertebrates.

As in so many other coral reef environments there are worries about both bleaching and coral disease, but here the visiting diver doesn't seem likely to find large areas of dead reef. What will be seen are patches or expanses of actively growing hard coral on the top of older coral which is becoming part of the inorganic hard surface needed for new growth. Whether the new growth is keeping pace with coral die-back can't be judged in a short visit and is more in the realm of long term research but what can be seen is good.

As so many other of our marine habitats the Bahamas have been over fished. The numbers and sizes of

fish doesn't seem as high as might be expected. What will be noticed is often the lack of larger fish though the range of species is reasonable. Different sites and even more so the different islands will show variety as would be expected considering the huge area and varying human densities covered by the country. The range of sharks present does give an indication that the reefs and environment are generally healthy as top predators need food and that food also needs to eat.

Large fish, even predatory ones such as the Nassau Grouper, have been shown as necessary for healthy reefs. Research in the Exuma Cays Land and Sea Park found, with protection, the grouper



or divers, more akin to putting a bird feeder out in the back garden.

Hawk's Nest

—*Cat Island had fisherman attract sharks.*

On Cat Island there wasn't a shark feed, but instead an impressive turnout could happen when visiting sports fisherman cleaned fish on the end of the jetty in the evening, and similar attractions occurred on Andros. Otherwise it was seeing sharks generally along the reefs on Cat Island, again at a distance but a thrill none the less. Occasionally a nurse or reef shark was seen sleeping under an overhang. On Exuma Island a shark feed was briefly tried at one location but it attracted in more sand tiger sharks so was discontinued as thought possibly dangerous for the

location. Jim Abernethy's Scuba Adventures liveaboard shark trips, out of Florida to Tiger Bay off Andros Island and other Bahamas locations, are designed specifically to see and dive with sharks and the variety can be good with many different species depending on location. Generally these are brought in by chumming and the trips are a favorite for photographers. At least 9 species of sharks can be seen in the Bahamas with probably the largest being the Great Hammerheads and Whale Sharks.

Coral Reefs

So, you dive or maybe you don't dive with sharks on one of these organised shark attractions, what else? Coral reefs are fantastically complex ecosystems and one of the big things

for many tropical dive destinations and it's no different in the Bahamas. On offer will be the worlds 3rd longest barrier reef, off Andros Island, other shorter barrier reef off other islands, patch reefs, small and large pinnacles and more. With tunnels, chimneys, canyons, sand shoots and of course walls all represented as types of structures within the overall systems. The corals themselves seem in reasonably healthy condition in the locations I've visited, with a diversity of both hard and soft coral species dependent on the actual site. But, corals are only part of the coral reef ecosystem and its the reef ecosystem we are really interested in when diving. That ecosystem has the hard corals forming the basic structure and providing nooks and crannies which can act as homes for fish and



Caribbean Trumpetfish (above); Smallmouth grunts (top right), often along with French grunts, were an ever present fish; Caribbean Spiny Lobster seen on many dives (bottom right)

were able to grow large. They are predating on parrotfish and others which eat algae off the reef, so at first the worry was fewer parrotfish would mean more algae smothering coral. Instead it was found the grouper predated smaller bite size fish reducing them in number but allowing some to grow beyond predated size. These larger parrotfish graze more seaweed than the larger numbers of smaller fish. Complicated, but

protection from human predation allowed healthier reefs in protected zones due to a better distribution of fish sizes. This over spilled to adjacent areas which then had both better fish to catch and better reefs. The lessons have been learned, just not acted on, as so often the case, we need many more protected zones.

Some put the blame for low fish numbers and small size on big American pleasure fishing boats



who have come in, fished to load holds with tons of fish bedded down in ice then departed to pay for the holiday by selling the catch privately back in the USA. The Bahamas government have recently, January 2007, started trying to control this with tough new legislation and catch limits. Others put the over fishing down to Bahamians who supply local restaurants on a casual basis. Protection is being provided in addition to fishing limits with several important protected areas: the Exumas Land and Sea Park and the Pelican Cays Land and Sea Park plus a few small sites. These protected locations are showing larger sizes and populations of both fish, conch and lobster. Campaigners have been working on adding other protected areas but progress seems slow according to environmental groups. Whatever,

the fish are needed to keep the reefs healthy and with time hopefully what we see as divers will improve from good to great.

Diving the reefs can be as relaxed as a shore or maybe a boat dive in a few meters depth at some locations, but most often will be by short boat trip with depths to the more usual 10 to 30 m not counting some of the walls which can be sheer with effectively no bottom. The patch reefs often have sand adjacent providing a reef friendly diver entry point which can cater for all levels of experience.

For example on Cat Island out of Hawk's Nest it can be a stroll to the beach and dive staghorn coral with schools of yellow snapper to keep you company. Or a night dive on Andros with flashing underwater luminescence on the boat ride out, then after slipping into the dark water on

site to have it come alive with more bioluminescence before finding your light attracts krill that can literally explode when hit by a nematocyst from a seemingly docile coral. Down amongst the



Bahamas

coral heads the arrow crabs and feather stars are out the, parrot fish in. Maybe it's the shallow fore reef of Jean's Dream on Andros, a coral garden with a topography of hard coral columns for as far as one could swim in any direction. The columns or heads maybe a foot or two in diameter, 6 foot high a few foot apart, some acting as cleaning stations with little yellow wrasse and blue damsel fish. The blue surgeon fish, parrotfish, French grunts or smaller grouper would call in the cleaners with a flick of the tail and a vertical orientation. The hard corals having the usual Christmas Tree worms, the banded coral shrimps and other invertebrate life. Maybe you dive Duck Cay off Exuma with its sandy rivulets running between the good mix of hard corals in large bommies and the lobsters hiding under ledges.

Just a little deeper might be something like that on Caves Reef out of Grand Bahama with its deep hard coral gullies and shoals of good sized goat fish, large parrot fish and squirrel fish holding



Theo's wreck

One of two sisters

the "Playground" just off Cat Islands Hawks Nest, or Turnbull's Gut off Andros. To float along a wall with with table corals, whip corals extending out, the shark lazing along above you, the turtle keeping you company gives a fantastic feeling.

Not all areas of wall will feel the same. On the northerly islands of Grand Bahama, Andros or Paradise some of the walls edging the deep channels started with the flat reef top then 50 degree sloping sandy sections with only scattered coral growth down to a deep diver depth over which much of the dive was conducted, this before dropping to near vertical and below live coral depths. These sections are not as dramatic so check the descriptions with the dive shop. This contrasted with walls at Cat Island and I gather on Long Island and others where a reef top possibly as shallow as 10 m depth could immediately change to vertical and be covered in splendid live coral for some distance down the sheer face.

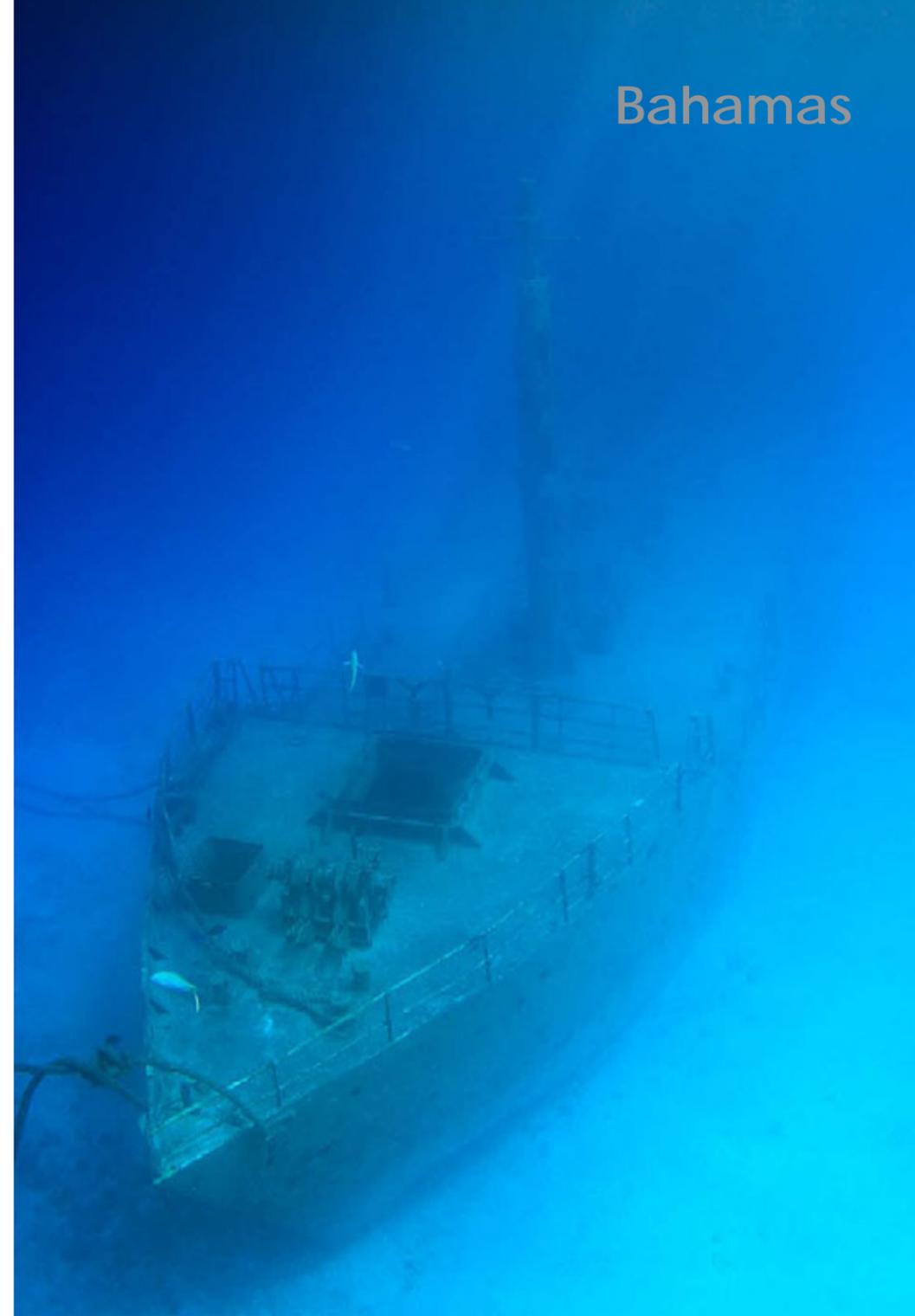
Many of the areas of wall, indeed other reef areas, have been little explored on many of the island. Some of my dives on Cat Island my buddy and I were the only ones present without another boat let alone a diver seen the whole day while much of the reef on Andros hasn't been fully explored. Check out the Family or Out Islands for the unexplored. Yes, you can have great dives on coral reefs, you don't need to be a specialist in these animals to enjoy them and what they have produced.

Bored with coral?

Wrecks, both ancient and modern, accidentally or purposely sunk are on many of the islands and many a diver's "to do" list.

Those sunk for diver tourism are as interesting or even more so as accidental ones and offer both habitat and structure to explore. What is it that wrecks do to attract divers? A bit of adventure, often some history, a man made structure to explore in a way impossible on land, they are habitats and, hey, it can just be fun. There are way to many in the Bahamas too visit them all, I managed a few: Papa Doc and Theos Wreck on Grand Bahama, the Marion on Andros, the Twin Sisters out of New Providence were all great fun dives.

Theos Wreck Theos Wreck, a 70 metres (230 feet) long cement hauling freighter was purposely sunk in 1982 by the suggestion of Theo Galanopoulos as a gift, the first artificial reef of the Bahamas and tourist attraction for the Bahamas government. It is rated as one of the best dives of Grand Bahama by many and it is a great dive. It lies at 30 m (100 ft) in an area with some tidal currents so is treated as a dive for the experienced. The ship was built in Norway in 1954 as the M/S Logna and used for cargo sailing between Spain and Norway then bought by the Bahama Cement Company to carry sand between Florida and Nassau and Eleuthera. A refit couldn't be financed economically so it was decommissioned and Theo came up with his suggestion. Now it has good growth of gorgonians, sponges and corals with grunts, a few lobster, eels and more making it home with visits from the occasional shark, ray or turtle. It's an easy wreck to penetrate with open holds and access to the engine room with enough space so it doesn't feel claustrophobic and it looks like a ship not just a scrap yard.



Papa Doc wreck At nearly the other end of the scale from Theos is the Papa Doc wreck which is a big boat really not a ship. It came about as the original by this name was a gun runners wooden vessel now all but gone. The site was popular so a new steel vessel, 50 foot length, was added in the same location in 45 foot of water. It looks like a boat should

look, upright on its keel and small enough to easily take in, possibly with time to explore the adjacent reef as well.

The Marion Andros Island, The Marion, a construction barge with crane was commissioned to move some equipment for the US Navy AUTC base in 1988. It happened that trying to lift a

position near the bottom, maybe a small reef shark cruising past or other sites with tube or barrel sponges. What will be seen does change with depth, the largest differences above or below the 7 to 10m depth band. The sites are numerous just to make a major

understatement and you can go on getting deeper till you drop over the edge of a wall. It can feel incredible gliding through a large archway or navigating a narrow coral tunnel to exit in clear blue hovering over 1000 m (3000 ft) of nothingness as at

buoy a bit heavier than its rated lifting capacity didn't quite work, it sank, giving us a good barge with a lot of interesting shapes in the crane to swim around at a maximum depth of 70 feet (21 metres) on a white sandy seabed. A fun dive with potential to explore; maybe its not going to enter the records as a classic site but instead will show you a grouper or two, French angelfish, grey snapper, fairy basslets, goatfish. maybe the resident eel and passing barracuda. While if you look hard enough invading lion fish may also be found.

Film set wrecks New Providence has remnants of film set wrecks such as the vessel Tears of Allah from 'Never Say Never Again' and the Vulcan

Bomber from 'Thunderball', the Treasure Wreck wreck built as a prop for 'Into the Blue' and sunk in 2004 along with many others which can be dived. I only managed the Carib Breeze and Tropic Breeze Wrecks site also known locally as the Twin Sisters. These are two 200 foot tankers donated by Shell and sunk next to each other in 2000 to create an artificial reef. They sit in about 70 foot on a white sandy bottom just next to a sand slope covered in garden eels. On top of the shallow plateau, up the sand slope, the garden eels attract in visiting rays and turtles browse the eel grass. Both the wrecks are ship shape in great condition giving more than enough to visit for a dive or two.

I've only had a taster of the possible wrecks on offer, maybe

one of the problems with the Bahamas, there can be too much to do and see. For a real wreck junkie it will take a bit of extra research finding which island offers the most of what you want to see then organising a specific itinerary with a dive shop before arriving, as the normal fare offers variety not specialisation. For my British cohort wreckies, the wrecks, as for most diving, are no take zones so you can't bring back the odd chunk of brass or old porthole.

Blue holes

All of the main islands of the Bahamas have blue holes as might be expected from the geological history. Blue holes generally are the collapsed roof to an underground cave

which were formed when the sea level was low enough to leave the islands high and dry. These are often listed on itineraries but not always visited regularly either due to some having awkward locations, with others the technical diving requirements don't place them at the recreational level. I suspect some divers also find blue holes less interesting than first imagined as they have dived ones which can be seen as "just a clear blue water dive in a hole without much else" but this depends greatly on the individual site. Andros Island has the best known ones and is the capital for blue holes with at least 178 on land another 50 or more in the sea, more than anywhere else in the world. Some of these are classics

Barral sponges (left) of a number of species along with other sponges commonly seen at some locations; Divers (below) in the Great Blue Hole

Bahamas



of diving history both in exploration expeditions and resulting from this in filming terms.

One of the exceptional marine ones known as the Great Blue Hole or as King Kong's Cavern is visited by Small Hope Bay Lodge on a regular basis. It is the second deepest in the

Bahamas and measures about 300 foot across at the top. Its entrance region is large and diverse enough to need a number of dives just to see all the potential at this level. Most commonly one descends to the rim at 12 m (40 foot) over its edge and down an ancient waterfall chute



CLOCKWISE FROM LEFT: You may find Atlantic bottlenose dolphins out in the wild if you are lucky, these off Andros; Yellow sub get together; Fish meet the yellow sub

Bahamas

Swimming with dolphins Another activity which, here in the UK really gets the controversy going with a few, is swimming with dolphins. It's an activity done in many countries around North America and the Caribbean and in the better offerings seen as fun-

vehicles, OK there are some differences from most others. Here you have a bubble top even allowing for your hair to stay dry, glasses to be worn, and no need for any previous scuba experience. They are free ranging but tethered to the surface with a float and accompanied by swimming scuba diving safety attendants. The participants have a briefing on shore, join the dive boat and proceed to a rather good area of shallow coral reef with sandy bottom adjacent. The SUBs are winched overboard with

maybe show non diving family members some of what we see. For experienced divers it may seem a little tame, but one comment I heard was that with the bubble top they had a much wider all round view so could better understand the reef than ever with the more restricted view through a mask.

educational. The programme at UNEXSO strives to be very dolphin friendly with controlled conditions so no harassment and good conditions. Three levels of interaction are offered; standing in the water with them, swimming with them in confined conditions and swimming with them in open seas encounters. The



before continuing along under a huge overhang effectively producing a cavern of amphitheatre proportions. Giant boulders are wedged floor to ceiling here and the dive continues, depending on air, under and among crevices of these boulders exiting in what they call the big room before returning to the waterfall chute. More specialist dives, still at the recreational level, explore other areas around this blue holes entrance and tunnels leading off it to other entrance points while technical divers could have a field day exploring deeper reaches of it. The Great Blue Hole is a fantastic site and totally blows the concept of blue holes just being plain boring holes in the ground. It does need to be dived on an outgoing tide, preferably in the morning for better light penetration, but isn't constrictive nor need lights.

As a note on the more technical side Small Hope can take recreational divers

into twin set realms with full introductions then a range of great dives that require this form of redundancy for blue hole, cave and deeper dives on walls along with helium for trimix.. They have nitrox and can mix to requirements including hot mixes. They didn't have rebreathers on offer, but can arrange supplies of absorbent.

Life is not all diving

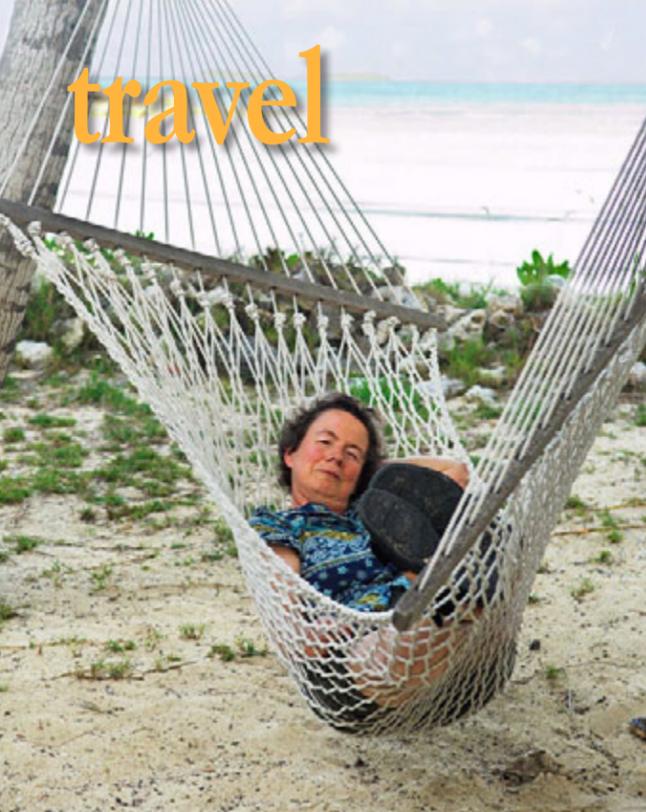
With the tourism hat on, the Bahamas offer the non-diver some attractions which are at least approaching the realms of the diver and what we find so exciting about our special underwater world. Yes, they do have aquaria but moving beyond that are little Yellow Submarines at Stuart Cove's Diving in Nassau/Paradise Island.

Little Yellow Sub To a diver the Yellow Submarines are manned dive propulsion

the bubble top above water level where you enter it before it is lowered further and freed. The new driver heads off, maybe with a gentle crash or two with other SUBs as steering is learned, to explore along the reef at 15 foot depth and hair still dry. The attendants on scuba point out interesting features and fish then feed tiny amounts of fish feed, which brings in absolutely hordes of yellow jacks and more, in front of each SUB diver.

These SUBs seem a stunning way to

CLOCKWISE FROM LEFT: Learn to just relax; Exploring the mangroves at Lucaya National Park on the boardwalk Not everything is diving on Grand Bahama even if it is wet at times; Dive boats weren't overcrowded, this one at UNEXSO



Topside

—Life, besides not being all diving, not all of the Bahamas is underwater Americans comment that the Bahamas are now an expensive destination, while from England I noticed it was just a little less expensive than staying at home. Value partly depends on expectations and what you do. The Family Islands (i.e. all but the highly populated main two) have small populations, relatively few tourists, a laid back lifestyle and an infrastructure which fits but that infrastructure can creak if pushed too far. Life here doesn't always depend on the clock, nor on your wallet, just sometimes, and you need to learn which applies to a situation.

human participants I talked to really enjoyed the experience, and one who had done this at another location said this one was far better as it offered more freedom of interaction both for her and the dolphin.

On Exuma I stayed at the Club Peace and Plenty, Georgetown, diving with the attached Exuma Scuba, all very convenient except ordering lunch in the hotel between dives took



only gets about 8000 tourists a year, most for the world class bone fishing. These small numbers mean a choice of accommodation is limited but there are a number of small hotels, some very reasonably priced, but not necessarily in easy reach of

friendly and helpful, at the Andros Yacht Club they hunted down a computer guy, a friend of a friend sort of contact to try putting it right. Sadly that was to no avail, the sickness continued, but Small Hope and Stuart Cove's all helped out with access to their computers, till after 2:30 in the morning on one occasion. It's the sort of friendly helpfulness which seems



longer than the surface interval. I ended up using the local store to buy quick soup packs, at 20 cents, to heat in my room's coffee maker to save time and money. Lunch was thought of as a relaxed laid back time to contemplate life not a fast, quick snack in a busy schedule.

At Small Hope Bay the package is an all inclusive one including food and drinks (out of busy hours you are welcome to be your own bar tender, without a tab!) which gave an incredibly friendly, sociable and relaxed ambience, but cost was more than at the Andros Lighthouse Yacht Club & Marina so I stayed 3 nights at Small Hope and two at the Yacht Club. Andros Island



Small Hope which is now the only diving establishment.

With digital cameras a computer is essential, mine went sick, really sick. I found the Bahamians and other locals

is present to explore / exploit, sadly I didn't. Ideally for this your own transport would be useful. On Paradise Island I never really got beyond the Nassau Beach Hotel except on Stuart Cove's

endemic in the Bahamas, but you need to play your part with flexibility.

So little time

Limited time is always a problem for divers. On Grand Bahama and Nassau/Paradise Island the shopping experience

Swimming with the dolphins can be hard work keeping up as not holding just gentle contact



Diver (left) signals OK in the Great Blue Hole; The wreck of the *Marion* (below)

oriented shopping, entertainment; hotel region adjacent to the capital city of Freeport. It does have a moderate amount going on even attracting in locals from other regions, but it can be worth exploring further afield. I did some exploration of Grand Bahama which is a nearly flat island intersected with many purpose built canals allowing the many prestigious houses to moor their boats adjacent. These canals plus the mangroves offer excellent breeding grounds for marine life. I was able to have a quick tour driving around areas in and outlying Freeport; seeing the banking and business district

through the car window, the horse riders along a beach and in the sea, the mounds of conch shells by market stalls, and other near empty beaches. These explorations did take me east to The Lucayan National Park, a 30 minute drive on empty but good roads to one of the few protected zones. Here a boardwalk trail through mangroves meanders to an absolutely stunning white sand beach deserving more leisure time than I could give it.

The Family Islands generally offer less for the shopaholic but I found they can be great for the eco-tourism, local crafts and customs and I understand also for fishing, sailing, general water sports and simple relaxation on good beaches. With Hawk's Nest I wandered up the local estuary exploring mangroves in a flat bottom boat, and I met local basket makers on a car drive both on Cat and Andros while on Andros a visit to the batik factory, which supplies most of the other islands with printed materials, was a walk down the road from the Yacht Club.

Diving is well catered for, but I still took my own kit. The internal flights don't have big baggage allowances nor offer extra for divers but flights are short so the extra charges are not completely prohibitive just annoying. I have looked at dive operations on 5 of the islands and all offered up to date, good kit for hire but official regulations are limited so check what you are hiring. The one item I would always recommend taking on any trip is your own exposure suit, in this case a 5 mm wetsuit



Bahamas

Shallow reefs with the deep blue of the Tongue of the Ocean as seen flying between Grand Bahama and Nassau

seems the most appropriate, you know it fits. People come in too many shapes and sizes for any hire shop to always have a wetsuit that's right.

Yes, the Bahamas are tourist centric for a visitor and it does take a little effort to move beyond that but they do offer some really good diving and more than enough to keep non-divers happily occupied. At least at some places, such as Small Hope, families can be catered for with child care provisions. So just a bit of added effort and more time a great deal extra could be done or maybe just learn to relax, lay back and the Bahamas can be a great place to unwind. I must give that a try sometime. ■

Interested in marine life since childhood in California, Charles Stirling tried scuba in University but the need for glasses and at the time lack of knowledge about prescription masks stopped this as

an activity. Did research on marine invertebrates going on to do PhD in Zoology emphasizing neurophysiology and electronmicroscopy. Rediscovered diving about 10 years ago when heard prescription masks were available. Did CMAS, then PADI, BSAC and TDI training before adding underwater photography. Now publishes frequently in the UK Sport Diver and other UK diving and more general magazines. Became the environmental correspondent for the BSAC Travel Club a few years ago.

Great Barracuda



pickup bus. The hotel is in a complex of interrelated hotels (OK, it was, as now being demolished for a larger more upmarket one), a casino and a couple of restaurants isolated from anything else within walking distance. No feel at all of the Bahamas will be obtained with this isolation. Previously I have stayed at the Orange Hill Beach Inn, also isolated. This isolation seems part of a modern day way to contain tourists and can be great if it's what you want otherwise transport becomes essential as there can be so much to experience.

On Grand Bahama UNEXSO are located in the Port Lucaya area and I stayed in both the Pelican Bay and adjacent Sheraton Our Lucaya Hotels. Port Lucaya is a relatively newly developed rather tourist



Grand Bahama

Dive diversity

Text and photos by Matthew Meier





Black grouper (left) having its mouth and body cleaned by cleaning goby fish; Large green moray eel (top left); Scuba diver at large coral bommie as a Caribbean reef shark swims past (above)

Have you always wanted to dive with sharks? Hug a dolphin? Explore shipwrecks, caves and colorful coral reefs? What if you wanted to have all of these adventures wrapped into one destination? Then, it is time to visit the Caribbean island of Grand Bahama.

Located 55 miles due east of Florida and roughly 100 miles from Ft. Lauderdale

or Miami's International Airports, Grand Bahama is easily accessible from the U.S. mainland by plane, boat or cruise ship. It is the fifth largest of the approximately 700 islands in the Bahamas island chain while enjoying a modest population of only 75,000 people. The Bahamas capital city of Nassua alone has 250,000.

The relaxed atmosphere of Grand Bahama is apparent as soon as you set foot on the island. Simply looking down upon the turquoise waters during the flight in is enough to kick start your attitude adjustment. Those crystal clear waters are leg-



Common lionfish on reef. PREVIOUS PAGE: Cristina Zenato hand feeding Caribbean Reef Sharks





Common bottlenose dolphins leap out of the water in unison next to a UNEXSO dive boat

trainer gave a briefing explaining the plan for the day and an overview of hand signals with which to elicit behaviors from the dolphins. Once at our destination, the trainer expertly managed the dolphins as they were sent to one diver or snorkeler at time to perform behaviors at our request. We were able to swim alongside the dolphins, have them spin us in the water, give them a hug and go for a ride while holding onto their dorsal fins.

I have spent a lot of time in the water with dolphins and have to admit that I never tire of the experience. There is something truly remarkable about

interacting with these amazingly intelligent and playful creatures.



Common bottlenose dolphin poses for pictures with a scuba diver kneeling on the sea floor (above); Snorkelling with a common bottlenose dolphin (left)

endary for their astonishing visibility, so it is no wonder they have played host to several Hollywood movies including *Pirates of the Caribbean*, *Splash*, *Cocoon* and the James Bond movies *Thunderball* and *Never Say Never Again*.

Dolphins

Grand Bahama is the only place in the world where you can interact and swim with captive dolphins in the open ocean. The Dolphin Experience is run by UNEXSO (Underwater Explorers Society), and they are responsible for a breeding program of 16 Atlantic bottlenose dolphins. These second and third generation captive dolphins live in a natural nine-acre lagoon called Sanctuary Bay.

There are several different dolphin encounters to choose from, with varying levels of involvement. The dolphin interactions range from standing on a submerged platform, to swimming with dolphins in the lagoon, to open ocean snorkeling and scuba diving with dolphins along the coral reef and ultimately to becoming a trainer

for the day. At every level, the dolphins perform behaviors on your command, interact up close and personal and even pose for photos while you give them a hug or a kiss.

I was fortunate enough to be able to participate in both the open ocean snorkel and the scuba diving encounters with the dolphins. On both occasions, two dolphins escorted us from Sanctuary Bay, following their trainer's boat through the canals to the open ocean. Along the way, the dolphins were asked to perform jumps and spins beside the boat, and at their trainers command, they exploded out of the water in perfect unison, soaring high in the air, before splashing back into the ocean. Prior to each encounter, the dolphin





Scuba diver hovers over the bow of this 50-foot, triple-decker tugboat called *La Rose Wreck*

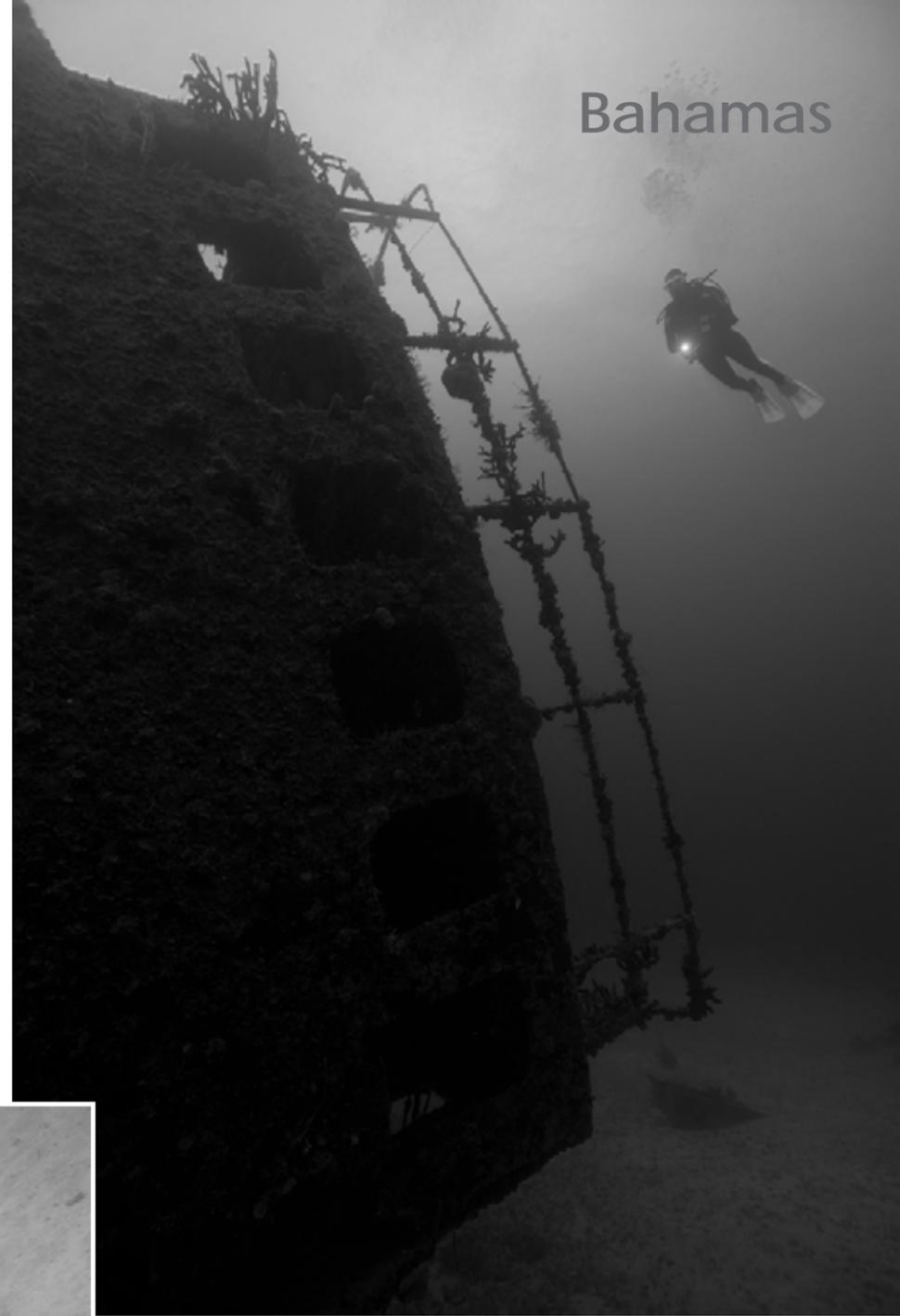
mooring line, *Theo's Wreck* is an impressive site as she materializes from the depths. The wreck has a myriad of coral and sponge growth on her hull and a resident green moray eel can usually be found. Given her size and depth, it takes several dives to explore the full structure properly. Sadly, we were only able to dive *Theo's Wreck* once during our stay, and I look forward to seeing more of her on my next trip.

La Rose is a classic triple-decker tugboat that sits upright in 95 feet of water next to a dive site called Moray Manor. Sunk in 2004 as an artificial reef, the wreck's close proximity to the sloping coral reef allows for longer bottom times by using a tiered dive profile. We were able to spend 10-15 minutes on the wreck at 80-90 feet and then work our way up into the large coral heads that populate Moray Manor, all the while being escorted by a large, inquisitive barracuda. Once on the reef, we were entertained by a school of bar jacks congregating above a huge colony of

great star corals.

Another popular site we dove was Papa Doc's Wreck. Though truth be told, the only thing left of the original 1968 shipwreck were the engine blocks. Sunk in a storm, the original boat carried a group of mercenaries headed to fight in the Haitian revolution to overthrow François "Papa Doc" Duvalier. Now in its place, sitting 50 feet deep and upright in the sand, is a tugboat named the *Badger*. The wreck supports a healthy array of reef fish safely tucked away in the wheelhouse and significant coral and sponge growth is starting to show on its hull. If you look closely out in the sand you may even find a kitchen sink nearby. In my case, a Caribbean reef shark and some trailing bar jacks were kind enough to swim between the sink and the tug making for a fun photo.

The last of the shipwrecks we visited during our stay was called the *Pretender Wreck*. Other than the base of the hull and twin props sticking up a few feet out of the sand, there was little left to see.



Shipwrecks

There are numerous shipwrecks to be explored in the waters around Grand Bahama. Some were sunk as the result of storms or ran aground on the coral, and others were sunk intentionally as artificial reefs.

The largest vessel we explored

was called *Theo's Wreck*. Sitting on her port side in 100 feet of water, the adventurous may penetrate *Theo's* hull both at the cargo hold and the engine room. Formerly a 228-foot cement hauler, she was sunk intentionally by UNEXSO in 1982. Working your way down the

In fact, I would bet that most folks who dive this site never even notice the wreck at all. That is primarily because this spot is also called Shark Junction, and divers are usually kneeling in the sand along the edge of the *Pretender*, surrounded by circling Caribbean reef sharks.

Sharks

The shark feeding dive on Grand Bahama is not to be missed. There are a couple of outfits that offer this dive, but I would recommend

Scuba diver hovers over the conning tower of *Theo's Wreck* (above); The *Badger* wreck (left)—this tugboat was intentionally sunk near the site of Papa Doc's Wreck



Caribbean reef sharks swim circles over the sandy bottom

in animals that is often induced by turning an animal onto its back, or in the case of some sharks, by placing one's hands on its snout. The shark becomes rigid, and its breathing becomes steady and relaxed. While in a state of tonic immobility, the feeder is often able to bring the shark over to the guests so that they might touch a shark in the wild. UNEXSO also offers a shark feeder course if you would like to learn to hand feed sharks yourself.

Before and after the shark feeding dive, the crew educates guests on the need to conserve sharks, dispels myths surrounding sharks, describes specifics of shark behavior and explains the dangers sharks currently face from humans.

Scientific studies estimate that humans kill between 26 and 73 million sharks each year, and you will often see that number quoted as high as 100 million

Bahamas



UNEXSO, who pioneered shark feeding on Grand Bahama over 20 years ago. Diving supervisor, Cristina Zenato, has been feeding sharks here since 1995 and was recently inducted into the Women Diving Hall of Fame for her efforts in ocean and shark conservation.

I have never experienced a more peaceful, fascinating and exhilarating dive in my life. A dozen or more Caribbean reef sharks swam slow circles around the feeder and in and around the divers, waiting for their opportunity to be fed. This was not a feeding frenzy where sharks fought one another for food in a cloud of stirred up sand. This was a chance to see these wondrous creatures up close in a carefully controlled encounter, making for an amazing underwater adventure. Never did

I feel threatened or that the sharks were looking at me as food. I had countless sharks pass within inches of me without a hint of aggression. The sharks knew exactly where their food was located, and we humans were simply not on their menu.

During the dive, divers line up shoulder to shoulder, kneeling on the sand in 40 feet of water. Once everyone is in position, the shark feeder approaches, dressed in a chain mail suit and followed by a procession of eager sharks. The feeder then methodically extracts one fish at a time from an enclosed container and hand feeds an individual shark as it passes by. If guests are lucky, they will also get to witness a shark being put into a state of tonic immobility. This is a natural paralysis



Shark feeder, Cristina Zenato, picks up and positions a Caribbean reef shark in a vertical head stand after inducing a state of tonic immobility (above) and surrounded by Caribbean reef sharks in shark feeding dive (left)



Scuba diver in the main cavern of Ben's Cave

Bahamas

cialized cave training, a certified guide and permits. For divers like myself that are not cave certified, there are also a few large caverns at the mouth of these caves in which we were able to dive.

The largest cavern is at the entrance to Ben's Cave, on the eastern side of the island, within the Lucayan National Park. The cave is named after Ben Rose who first dove here in 1967. Ben still lives and works on Grand Bahama and is one of only two people certified to train new guides. (Cristina Zenato is the other.) Accessed by way of a spiral staircase to a long wooden deck below, the cavern is roughly 200 feet long, 100 feet wide and 50 feet deep.

As you descend into the water, the first 25-30 feet consists of crystal clear fresh water. Beneath the fresh water sits a halocline, which is a salinity gradient within a body of water (Wikipedia). Less dense fresh water from the land forms a layer over salt water, which connects through the cave system to the ocean. Passing through the halocline stirs up the salt and fresh water and reduces visibility, so it is imperative to mind your depth. Within the cavern there are large rock boulders that are likely the result of the roof collapse that exposed the



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Opening to Owl's Hole Cave

Wooden boardwalk (left) and spiral staircase inside Ben's Cave

sharks. Most of these sharks have their fins cut off while still alive and are then thrown back into the water to drown. The fins are valued for shark fin soup and command a high price on the black market.

Caverns and caves

Grand Bahama has the second largest underwater cave system in the world, with over 32,000 feet of mapped tunnels. The vast majority of those tunnels require spe-





to the cave system connects to another, called Mermaid's Lair, by way of roughly 3,000 feet of underground tunnels.

Reef

The coral reefs surrounding Grand Bahama Island are colorful, varied and full of life. They play host to large star coral formations, flexible sea rods and vibrant sponges in every color. West Indies spiny lobsters hide under ledges, as do the occasional spotted and green



opening to the cave. There are also huge stalactite and stalagmite formations created over the millennia before the cave was flooded.

Bats nest in the roof of Ben's Cave from the first week of May through the first week of September. In the past, the cave was closed during this time, but is now open to the public year round. The cave system connects underground to another opening within the National Park called Burial Mound Cave. Several Lucayan Indian remains were found, perfectly preserved, under a mound of rocks, in a water-filled cavern near this entrance.

Owl's Hole Cave is another spot with a fairly large cavern at its entrance. This limestone sinkhole is approximately 50 feet in diameter and requires a harrowing 30-foot descent down a vertical steel ladder before hitting the water's surface. Named for the owls that nest on the interior ledges, this entrance



moray eels. Reef fish abound from jacks to groupers, porkfish to squirrel-fish, parrotfish, surgeonfish, filefish, goatfish, grunts and chubs.



CLOCKWISE FROM FAR LEFT: Colony of painted tunicates and mangrove tunicates attached to a sea rod; Longspine squirrelfish on reef; Detail of large colony of great star coral; Large coral head covered with sea rods, sponges, sea fans and great star coral; West Indies spiny lobster



Bahamas



CLOCKWISE: Large red hibiscus flower; Sunbather enjoys a deserted stretch of Gold Rock Beach; Chef makes conch salad, or cerviche, at Junkanoo Beach Club on Taino Beach

Garden eels and jawfish can be found in the sand if you are patient and slow on approach. Unfortunately, the common lionfish, an invasive species in the Caribbean, can also be found here. Native to the Indo-Pacific, they have no natural predators, a voracious appetite and are breeding exponentially. Some of the local dive guides have taken to spear fishing them to help cull their numbers on the reef. I am told that if prepared properly, they are quite delicious to eat as well.

The dive sites around the island are categorized by their depth and degree of difficulty. There are deep-water tongue-and-groove coral formations where you can expect to see sharks, turtles and other pelagic species. Medium depth reef formations, from 40-60 feet, typically consist of scattered coral bommies growing up out of the sandy bottom. Shallow reefs rise from 20

feet nearly to the surface and are perfect for beginner divers.

Topside

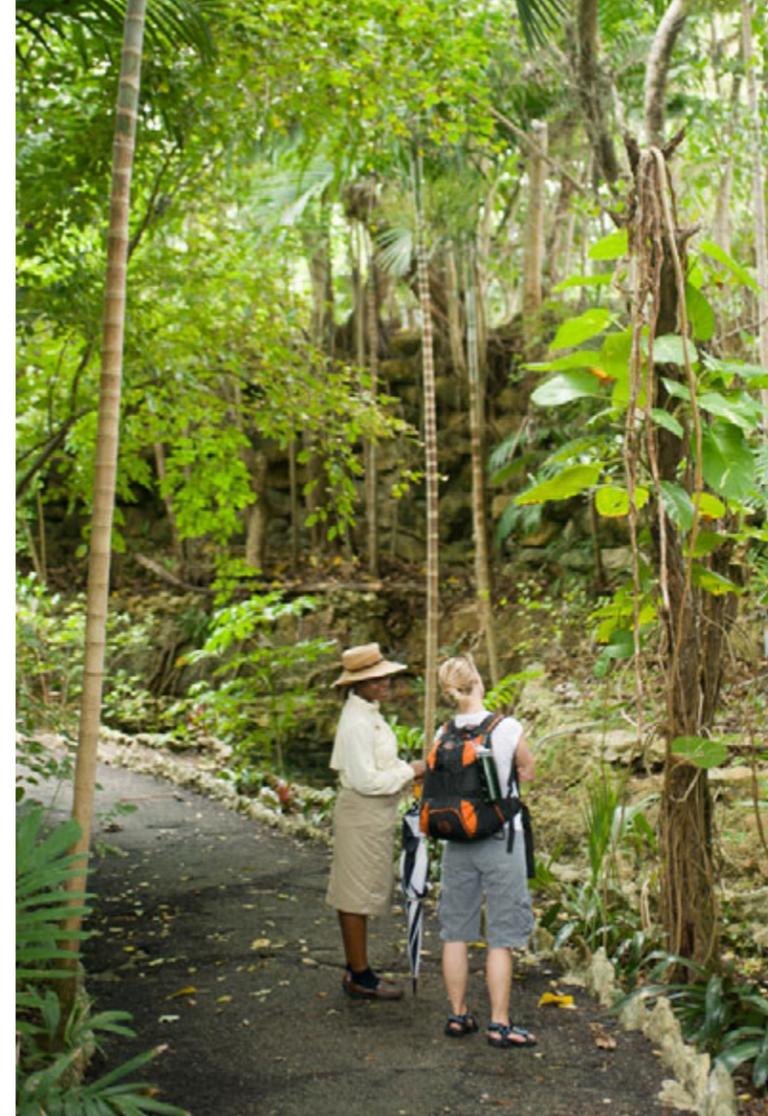
Grand Bahama offers a nearly endless array of non-diving activities to keep you entertained. Sporting pursuits include fishing, golf, tennis, bike riding, sailing, kayaking, horseback riding, windsurfing, parasailing and water skiing. There are casinos, shops, fantastic restaurants, live music and dancing at your fingertips. If that all sounds too hectic, perhaps you would enjoy a quiet stroll along an empty, white sand beach or simply sitting by the pool to soak in the sun.

A must see during your visit is the weekly, Wednesday night, Smith Point Fish Fry. Locals and tourists alike gather at family run restaurants right on the beach to enjoy delicious local fare, dancing and music. Whole fried fish and fried chicken are served with



Wednesday night fish fry at Outriggers Beach Club draws a crowd (above); Colorful entrance to the Port Lucaya Marketplace (top right)





CLOCKWISE FROM LEFT: Waterfall at the Garden of the Groves botanical garden; Red mangrove plants in Gold Rock Creek, Lucayan National Park; Fern Gulley section of the Garden of the Groves; Jeep tour by Grand Bahama Nature Tours; Cuban emerald hummingbird

peas 'n' rice, mac 'n' cheese, potato salad, coleslaw, conch salad and conch fritters. Slug down a Gulley Washer or a Rum Punch afterwards and you have had a night to remember.

A Jeep tour is a great way to see the island of Grand Bahama. Guests drive their own vehicles and follow a guide, caravan style, as they explore some of the beautiful beaches on the south side of the island and learn a bit of history as the guide narrates along the way. Continuing east the tour pass over the Grand Lucayan Waterway on the Casuarina Bridge. At 58 feet tall, the bridge is the second highest point on Grand Bahama and is the only way to get across to the east side of the island.

The Grand Lucayan Waterway is an 8.5 mile long canal that cuts the island in half

and allows small boat traffic easy access from north to south and back again. Construction on the waterway started in 1955, and the bridge was erected ten years later. As the tour proceeds towards the north side of the island, red mangroves and shallow wetlands replace sandy beaches. This area is famous for its bone fishing and is vital as a nursery to many young fish species, in addition to providing protection to the island from storm surge.

Pit stops along the way include the Garden of the Groves, a 12-acre botanical garden featuring lush vegetation, waterfalls and indigenous and migratory birds and wildlife. While strolling through the garden, savor a bite to eat or browse the Garden Shoppes to experience authentic Bahamian arts, crafts and prod-

ucts. Named after Wallace Groves and his wife Georgette, who founded the city of Freeport, the newly renovated garden re-opened in 2008 after sustaining significant damage from two different hurricanes in 2004. The island is nearly covered in Caribbean pine tree forests and they were the original draw for Groves, who settled here to start a lumber company.

Another stop might include the Lucayan National Park and Gold Rock Beach. Here you can examine Ben's Cave on foot, take a kayak tour through the mangroves along Gold Rock Creek or enjoy a quiet lunch on the white sand beach.

If you are interested in a more private and customized tour experience, I would suggest one of the local guides. Several are available, but after repeated local recommendations, I spent a lovely after-





Bahamas



LEFT TO RIGHT: Caribbean pine trees and Sabal palmetto plants line the Old Freetown Road; Little Bahama curly-tailed lizard sunning itself; Cristina Zenato, in a chain mail shark suit, hand feeding a Caribbean reef shark in shark feeding dive; Sunset behind a palmetto palm on the island's West End



been on Grand Bahama for over 45 years.

I look forward to visiting Grand Bahama again soon. There simply was not enough time for all the things I wanted to do on one trip. Numerous dive sites were missed, several wrecks still need to be explored and countless topside adventures have yet to be experienced. Perhaps I will even muster up the

noon with Ms. Paddy Wildgoose. She escorted us on a cultural tour towards the West End of the island, highlighting several of the local communities along the way. Ms Paddy is a wealth of information and a pleasure to be around. Originally from Nassau, she has

courage to hand feed the sharks. Come join me in Grand Bahama for your next dive trip or family vacation. You will thank me if you do. ■

Matthew Meier is an underwater photographer and dive writer based in San Diego, California. To

see more of his work and to order prints, please visit: www.matthewmeierphoto.com

A very special thanks to Cristina Zenato and UNEXSO (www.unexso.com) for providing diving services on this trip; Pelican Bay Hotel (www.pelicanbay-hotel.com) for their superb lodging; and the Bahamas Ministry of Tourism (www.bahamas.com) for providing airfare and coordinating land tours. Thanks to Ed Gates and Grand Bahama Nature Tours (Grandbahama.naturetours.com) for our Jeep tour. And finally thanks to Ms. Paddy Wildgoose at Red Carpet Taxi (paddytaxitour@gmail.com) for the cultural tour and airport shuttles.

Special thanks to Cressi-sub for providing gear used in the production of this article. Visit: www.cressi.it



Common bottlenose dolphins leap out of the water in unison (above); Photographer, Matthew Meier, and UNEXSO Diving Supervisor, Cristina Zenato, in Neptunic shark suits (left). Zenato was recently inducted into the Women Diving Hall of Fame

Text and photo by Matthew Meier

Recently inducted into the Women Divers Hall of Fame for her efforts in shark and ocean conservation, Cristina Zenato has made scuba diving her life since she first got certified in 1994. She is currently the Diving Supervisor for UNEXSO (Underwater Explorers Society) on Grand Bahama Island and has held that position for the last ten years. In addition, Zenato is a full cave instructor and in charge of all technical diving and specialty programs at UNEXSO. Zenato owes her love of the water, at least in part, to her father, Cesare Zenato. He was in the Special Forces as part of the National Association of 'Arditi Incursori' with the Italian Navy.

ing sharks, and the following year, UNEXSO created a shark feeding class for divers. By 1997, she was teaching the class and slowly putting her mark on how the shark feeding was conducted. The dive has evolved into a more relaxed and controlled encounter as opposed to a frenzied rodeo. Over her career, Zenato has dived with great white sharks, tiger sharks, lemons, bulls, hammerheads, makos, blues, Caribbean reef and nurse sharks.

Due to her incredible versatility and skills working in caves and with sharks, Zenato is in high demand from professional photographers, videographers and TV crews alike. She has worked with the Shark Man, Mike Rutzen, on a film about tonic immobility with sharks. She has helped the BBC, Discovery and National Geographic, collaborated on videos like *Gimme a Hug* and *333 Nina Salerosa* and been featured in *Shark Diver Magazine*.

Through the years, Zenato has continually lobbied for their protection and conservation. Thanks in part to her efforts on 5 July 2011, the Bahamas created a sanctuary in the approximately 630,000 km² (243,244 sq mi) of the country's waters to prohibit commercial shark fishing along with the sale, importation and export of shark products.



Zenato has supported professional photographers such as Stephen Frink, Bob Talbot and Todd Essick and also assisted Wes Skiles on his August 2010 National Geographic article on Bahamas Blue Holes.

Zenato is an amazingly accomplished young woman with a very bright future ahead of her. To learn more, please visit her website: www.cristinazenato.com ■

Cesare Zenato



Cristina Zenato

—Shark Professional, Cave Diving Instructor & Explorer



Born in the Veneto Region of Italy, Zenato grew up in the Congo (formerly Zaire) from the ages of three to 14. She finished high school back in Italy and then went on to Lindau, Germany, to learn the hotel industry. After two years of working for a hotel back in Italy, Zenato's boss forced her to take a vacation. She wanted to go learn to scuba dive and

ended up at UNEXSO on Grand Bahama. After her vacation, Zenato flew back to Italy, quit her job and returned to Grand Bahama 12 days later. She took a job at a local hotel and spent whatever free time she had, six to seven days a week, scuba diving. Within eight months, she became a certified dive master and began work full time at UNEXSO. She has been there ever since.

Zenato's fascination with caves began early in her diving career when she dove the cavern at Ben's Cave, with the caves namesake, Ben Rose, himself. In 1996, she travelled to the United States, to get her cave diving certification. At 24, she was too young to rent a car and had to use borrowed gear, but she managed to go from zero to hero, cavern to full cave, in 14 days.

Not something she recommends for her current students. Zenato started her Cave Diving Instructor training in 2000 and completed it in 2001. In her free time, Zenato maps and explores cave systems to provide vital information used to extend their protection and conservation. Her ongoing project on Grand Bahama has mapped over 32,000 feet of tunnels.

In 1995, Zenato began feed-

fact file

Bahamas



SOURCE: CIA.GOV WORLD FACTBOOK

History The Spanish gave the island the name Gran Bajamar, meaning "Great Shallows", and what the eventual name of the Bahamas islands as a whole is derived from. The islands were claimed by Great Britain in 1670. Grand Bahama was to remain relatively quiet until the mid-nineteenth century, with only around 200-400 regular inhabitants in the capital, West End. The island finally gained a stable source of income when in 1955 a Virginian financier named Wallace Groves began redevelopment with the Bahamian government to build the city of Freeport under the Hawksbill Creek Agreement and create the Grand Bahama Port Authority.

Geography Grand Bahama Island is approximately 150km (93 mi) long west to east and 20km (12 mi) at its widest point north to south. It has an area of 1,373km² (530.1 sq mi) and is the closest major island to the United States, lying 90km (56 mi) east of the state of Florida.

Climate The Bahamas are slightly cooler than other Caribbean island groups owing to their proximity to the continental North American cold air systems. The subtropical climate sees about 340 sunny days per year. Average air temperatures: Winter and Spring (December to May): 18-25°C / 65-77°F. Summer (June-August): 24-33°C / 75-91°F. Average water temperatures:

Winter (December to March) 24°C / 75°F. Spring 27°C / 80°F. Summer (June to August) 31°C / 88°F. Average water visibility: 24-30 metres / 80-100 feet

Economy The Bahamas is a stable, developing nation with an economy heavily dependent on tourism and offshore banking. Tourism alone accounts for more than 60% of the GDP and directly or indirectly employs 40% of the archipelago's labor force.

Currency Bahamas Dollar
The Bahamian dollar (B\$) is freely interchanged with the American dollar throughout The Bahamas. It is not necessary to change U.S. dollars into Bahamian currency. Traveler's checks in dollar denominations may be cashed almost anywhere. Credit cards are widely accepted. The Bahamas maintains cordial relations with all international banks and is known internationally for its banking and financial services.

Population Grand Bahamas population is approximately

RIGHT: Location of the Bahamas on global map

BELOW: Location of Grand Bahama Island on map of Bahamas

BOTTOM LEFT AND RIGHT: Diver being kissed by a common bottlenose dolphin; Red mangrove plants in Gold Rock Creek



75,000 (as of 2007)

Language English

Time Zone Eastern Standard Time prevails on all the islands except during the summer, when Eastern Daylight Savings Time is adopted.

Voltage Electricity in The Bahamas is the North American standard 120 volts at 60 cycles.

Food Grand Bahama offers a wide variety of international cuisines for all tastes. The local Bahamian cuisine consists mainly of seafood, poultry, or pork, typically fried, steamed, or curried,

ent adequate proof of citizenship, such as birth certificate and photo identification.

Telephone From North America, dial 1 + 242 + the seven-digit local number. From elsewhere, dial your country's international direct dialing prefix + 1 + 242 + the seven-digit local number.

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Tipping The usual tip on the islands, similar to the U.S. practice, is 15 percent. Sales tax does not exist in the Bahamas.

Driving British rules apply, so please drive on the left and watch those roundabouts. Visitors may use their home license for up to three months and may also apply for an international driver's license.

Airports/Visa Daily flights are available from Ft. Lauderdale (FLL) and Miami's (MIA) International airports to Grand Bahama International Airport (FPO). Citizens of the United States, Canada and The United Kingdom and Colonies do not need a passport for a visit that does not extend beyond three weeks. Visitors from these areas do need to pres-

