

GirlDiver

Edited by
Cindy Ross

Underwater, the
DPV becomes
easy to handle

Text by Cindy Ross

GirlDiver.com

Photos by Bill Battan
and Laura James

Hollywood blockbuster *Mission Impossible III* shows Ving Rhames diving beneath the Vatican on an XScooter DPV to save Tom Cruise from the prison below. Now, GirlDiver takes a look at the XScooter Dive Propulsion Vehicle (DPV) from a gentler perspective. Serious DPV diving for a girl? Is it too big? Too powerful? Too much of a "boy's toy"? I'm ready to test the toughest, lightweight underwater scooter of the bunch to see how it fits a girl.

In the world of diving, we have necessary gear, and we have fun accessories. The accessories of diving are used to enhance your diving experience, as fashion accessories are used to enhance your clothing selections.

There is a difference in designer handbags, as all women know. You've got the limited edition Prada bag versus the Coach purse at the local fine department store. One purse will cost thousands, whereas the other handbag, mere hundreds. And regardless of whether or not you're a purveyor of costly handbags, you've probably got a girlfriend or an office mate who will argue the legitimate value and pricing of their high end purses. There is the attention to detail, the usability, the size and the length of time one would expect the handbag to last with daily wear and of course, the materials of which the bag is made.



Dive propulsion vehicles

The scooters of the sea definitely fall into the accessory category. Not needed, but as an enhancement to your diving experience, they can ease the

effort and reduce the amount of air you breathe during a dive, as well as zip you out to a dive site without a lengthy surface swim. You can survey a wreck at depth, flying over the ship like an astro-

naut strapped to a rocket pack in space. Probably not a vehicle you'll be using on every dive, but one brought out on special occasions to add to the dive event.

GirlDiver

I was invited by the makers of the XScooter, Ben McGeever and Andrew Georgitsis, to take their super lightweight DPV for a spin.

Already familiar with scooters having a much lower price point, I was excited to try a higher end—“designer”, if you will—DPV.

Was there really a difference? Would the attention to detail, usability, size and length of time one would expect the model to last justify the cost difference? And known more in technical diving circles than recreational, would I, as a recreational GirlDiver, be comfortable on the unit, built for tech divers slinging extra tanks on their sides in addition to the doubles on their backs?

At the manufacturing facility, I was shown the process for making the scooter. A computerized lathe carves the cone from solid bullets of aluminum, to keep the vehicle light, the seams are welded, sanded and sent out for paint. A 60-pound thrust, brushless motor is added, with a variable pitch propeller system, to complete the most powerful machine in its class. To

add to the machine, underwater camera mounts, compass mounts and light mounts can all be incorporated to fit the diver's needs.

Originally, I had thought of trying out the Gavin, the beefiest of sea scooters. Ben offered to let me try the model they owned. However, after trying to lift the 78-pound behemoth, I decided the weight alone would realistically dissuade me from using the DPV very often. I thanked the guys for the offer, but today I would simply try their XScooter. I could carry the 35 lb/15 kg unit to the water myself.

At the beach, technical dive instructor and videographer, Laura James, met me to introduce me to the XScooter. A

Scooter Dive

Cindy Ross and Laura James assemble the DPV prior to the dive. A simple plug from the battery to the motor, and you're off and running

small female, she also owns the Gavin, though admits to not using it often, as the weight of the scooter tends to keep it at home when packing for a day of diving.

When Laura started diving her XScooter, the manufacturer had designed a smaller handle for her girly hands, however, she found the standard handle was a good fit as long as you're allowing the harness set up to pull you, not your arm. The DPV is attached to the diver on a d-ring clip at the waist, so manhandling the single handle was unnecessary.

I tried to allow myself to relax into the scooter, allowing the waist attachment to pull me, although it seemed counter-intuitive to not holding the handle tightly. However, if this is the biggest learning curve, it's easily overcome.

Underwater, the scooter really showed its capabilities. Not only was I able to power out to a site, but I could easily control the depth and wasn't worried about making too quick of an ascent to the surface, as it was absolutely neutral in the

A series of four o-rings seal the compartments, preventing the water from entering. Flooding the XScooter is almost unheard of

Ready to enter the water to test out the bad boy of underwater dive propulsion vehicles

water. When I found something to look at, I simply dropped the scooter from my hands, it turned off and floated beside me. Dangling in the water, the machine was not cumbersome. In fact, I barely noticed it was there while looking at anemone encrusted pilings.

The underwater ballet aspect was the best part of the dive. Hearing the music of a symphony in my head as I turned spirals

and pirouettes in the water. Feeling absolutely free, without a need to kick and really being one with the water and the scooter. I can see the addiction scooter owners have as I moved effortlessly through anemone covered pilings, navigating easily with a movement of the fin or a twist of my arm.

I found having one arm free allowed me to frequently check my gauges, which allows for better safety on the dive. The compass mounted on the DPV also made navigation easy, as we headed out to deeper waters. While we stayed well above the depth limit

With only one handle for guiding the craft, the diver hooks the DPV to a waist harness and allows the DPV to pull from the waist, not from the arms



BILL BATTAN



BILL BATTAN



BILL BATTAN



BILL BATTAN

GirlDiver



Pulling from the waist, the diver relaxes her arms and enjoys the underwater tour

for recreational divers, the XScooter has a depth rating of 600ft/180m.

As a school of piling perch crossed in front of us, I joined in their flight. The XScooter travels at a top speed of 200ft/60m per minute, so the ability to travel the same speed as the fish gave a new wonderment to swimming in the mass. Imagine swimming with seals, mantas or whale sharks —yet another benefit of the scooter.

At exactly 50 lbs/23 kg, the DPV plus hard rolling case, is within the weight limits for checked baggage on most commercial airlines. This allows the toy to be a part of the next dive holiday, where more

ground can be covered on new dive sites. While the toy will take up one piece of luggage, on holiday, you just need a few pieces of beach clothing, as you'll be enjoying the underwater realm with new found freedoms.

Whether stepping up to a "designer" DPV, or going with a lower priced model, the DPV is definitely a fun accessory to add to your dive locker—maybe not for every dive, but for the ones where you'd like a little more bottom covered, a bit less air used and the exhilaration of effortless speed.

With the lower end scooters, you

should expect less power. They fall into a "diver assist" category. The higher end scooters designed for the technical dive sector are true underwater propulsion vehicles. It's the difference between a land scooter (moped) and a motorcycle. The motorcycle is more of a machine, and when you want the power and the speed, it's worth the extra money.

Is the DPV too big for a girl? No. Today's lightweight and powerful, yet highly maneuverable DPVs are definitely just as suitable to be a girl's toy, as they are boy's. ■

PASCAL BERNABÉ
All the tek courses you need....

World Record -330m

Why learn Tek?
Explore deeper and longer...
Be happy, explore the new frontier!

Cave
Wreck Explorer
Deep Trimix 100-150m
Discover Cavern Intro
Cave in Lot or Mexico
CCR Inspiration
CCR Voyager

www.pascalbernabe.com
pascal.bernabe@libertysurf.fr



THE FACTS AND VIEWPOINTS IN THIS SECTION ARE NOT NECESSARILY THE VIEWS OF X-RAY MAG. EQUIPMENT PRESENTED IN THIS SECTION HAVE NOT BEEN TESTED BY X-RAY MAG STAFF, NOR ARE THE ITEMS WARRANTED. INFORMATION PROVIDED IS CONDENSED FROM MANUFACTURERS' DESCRIPTIONS. TEXTS ARE USUALLY EDITED FOR LENGTH, CLARITY AND STYLE. LINKS ARE ACTIVE AT THE TIME OF PUBLICATION



Edited by
Arnold Weisz

POINT & CLICK
ON BOLD LINKS



Out of this world Equipment



it Worx

The newest submersible from U-Boat Worx to be launched is the brand-new three-person C-Quester 3, which will be followed by the reinvented two-person C-Quester 2. The two-person C-Quester 2, with low storage height and weight, is designed to meet the growing demands from Superyacht industry. With the three-person C-Quester 3, a new range of opportunities is created for high-end resorts and hotels to offer their guests something extraordinarily. The electric C-Questers can dive up to a depth of 100 meters and are the first commercially available submersibles to be equipped with Lithium-Ion Battery technology to extend endurance. The first C-Quester 3 will be launched at the end of this year. Potential customers can expect to roam the subsea in spring 2009, but only after having been successfully trained as submersible pilot. www.uboatworx.com



Gara Professional

Making the Compoflex blade non-interchangeable and integrated with the foot pocket was a deliberate choice by Cressi to reduce even the tiniest dispersion of effort during kicking. Compared to the other Cressi Gara fins, the new foot of the Gara Professional was designed to fit on the bottom of the actual blade to help reduce the kicking effort and minimize the dispersion of energy during kicking. The shape of the foot was redesigned and improved even further compared to the other Cressi Gara fins. According to the manufacturer, the use of a new particularly flexible elastomer makes them even more comfortable. www.cressi.it

Extra Air Source 3

The environmentally sealed first stage is equipped with on/off valve. The second stage connects via a vertical/horizontal swivel. The available kits include first and second stages, a six cubic-foot tank, Yoke or Station Filler, and a quick release bag. The GPB button gauge is optional. www.h2odyssey.com



Neptune Helmet H08

This helmet from Ocean Reef is specifically designed for use with the Neptune Space, Raptor and Predator Ocean REEF masks. It was created to provide impact resistance during adventurous activities where head protection may be needed, such as cave or arctic diving. The GSM G-Power SL may be incorporated into the helmet, which makes it a very unique, lightweight, compact, underwater communication and protective piece of equipment. The helmet has the following features: lightweight, compact and impact resistant, non-water absorbent foam, uniquely shaped for rapid water drainage and maximum comfort, high cut shell for total peripheral vision and extends down over temple and ears for extra protection. www.oceanreefgroup.com

equipment



Potenza

A powerful recreational fin perfect for warm and temperate waters according to Scubapro. Features: duo-compound blade construction for optimized kicking power, underwater mobility and reinforced durability, full-foot pocket, lightweight classic non-vented blade with ribbed middle. The fin will be available in five sizes and three colors.

www.scubapro.com



Slimline

Dive Rite HID 1000

Slimline packs a powerful 1,000 lumens of illumination, which is 100 percent brighter than a 10W HID. An all-new protective reflector housing is shock-resistant and adjustable, offering the ability to change focus from a wide flood to a tight beam. Powered by a 12V 4500 mA NiMH battery gives 3.5 hours of burn time and is depth rated to 500 feet (152m). The Slimline canister holds the battery pack and is machined from a single piece of chloride pipe (PVC). Comes standard with Goodman metal hand mount. Also includes NiMH charger.

www.diverite.com



MB Sub

REVOlution. This new aluminium torch from the Germany comes with these features: 8.4V - 4.8Ah Lithium-Manganese-accumulator, integrated charging electronic, exterior charging (no need to open lamp), charging time approximately three hours, three-step dimming, four-step capacity indication, SOS signal generator, total discharge protection, head with halogen (20W HLX or 30W HLX) or head with 3 x 3W LED with true color dimming, reflector: spot 13° (halogen), optics: 13° or 20° (LED), burning time at maximum power 80 minutes with halogen, burning time at maximum power three hours with LED. Weight: 1.05kg. Drift: 0.4 kg.
www.mb-sub.com



Dogfish

Tom Rein's Dogfish neck knife, made of 3Cr13 stainless steel, has a lanyard hole and bottle opener, 2.25 inch blade with an overall length of 5.25 inches. It has a plain blade with a secure finger choil and friction grooves at the thumb spine and near the butt. Comes complete with a Kydex sheath
littleknifeshop.com



Muse & Mito

The Italians have launched two new jacket style BCDS—Mito for men and Muse for women. Features an outer breathing bag of PU-coated 420 D Nylon, inner breathing bag of PU-coated 420 D Nylon, frog clasps for keeping your knife at hand, expandable pocket, removable jock strap, three dump valves with pull command, D-rings at 5-25mm straight in stainless steel.

www.seacsub.it

Reviews



The Lunocet— Mimicking the dolphin fluke

By Arnold Weisz

Ted Ciamillo, owner and designer at Ciamillo Components in the USA, has designed a new and what looks to be a revolutionary freediving fin. Although Ciamillo first and foremost is known for making the Zero Gravity brake for the cycling industry, he's not a stranger to the ocean.

Passionate about the underwater world, Caimillo is constantly thinking about new ways to propel oneself efficiently through this medium. Back in 1998, Ciamillo created the futuristic looking K-10 Hydro Speeder (battery operated underwater motorcycle). Unfortunately, due to the small size of the scuba industry and the lack of reliable battery packs, the business venture sunk.

Then, Caimillo met a specialist in the swimming behavior of dolphins and whales, Dr Frank Fish of West Chester University in Pennsylvania, and the spark was ignited, it was back to the drawing board for Ciamillo again.

Back in the underwater world, Ciamillo's main goal was to imitate and reproduce mechanically nature's finest way to move through water—a dolphin or whale fluke kick action.

The Lunocet mimics the natural power and efficiency of the dolphin fluke allowing the lunodiver to operate in silent mode. The most important feature

that distinguishes the Lunocet from bi-fins, or traditional monofins, is that its system of lift-based propulsion provides for thrust on the up and the down stroke.

Another new feature are the foot pockets. According to Ciamillo Inc., the pockets provide for maximum user adjustability and comfort, because the foot is strapped into three different places on the footplate (different foot volumes have a comfortable and precise fit).

The footplates are CNC machined aluminum, with extremely light titanium hardware. The two hydrofoils are made from foam (machined to size), covered with carbon fiber.

"We believe that (varying on the input of the swimmer, experience, and personal fitness), a speed of approximately 8mph may be reached while using the Lunocet," said Ciamillo.

The Lunosapien nation is in pursuit of the complete human breach. Meaning that they are looking to propel a freediver completely out of the water by using the Lunocet fin. For this, Ciamillo is putting together a pro-team of athletes (freedivers, triathletes, etc).

For testing the item, well, how about a one million gallon lagoon! The lagoon has a bio-reactor, which takes care of the oxygenation of the water, while a water garden serves as a bio-filter and uses nutrients to prevent algae bloom. www.lunocet.com ■



Cool Fusion

By Peter Symes

I was forewarned. Yet, I wasn't quite prepared for the odd sensation of donning this remarkable new suit. The shell fabric felt deceptively thin, like a thin windbreaker, and I was rolling it on like a leotard, one limb at a time, while meticulously trying to avoid creases. The Fusion drysuit from Whites is, in most senses, a shell suit, as the thermal insulation is provided by a separate undergarment. But in other respects, it is in a class of its own.

The outer layer is remarkably flexible and stretchy, and it seems to contract a bit over the fluffy undergarment giving a snug fit and a smooth surface, without baggy wrinkles or folds. I felt a bit shrinkwrapped, but not uncomfortable.

In the water, it flew like a dream. It was streamlined. It was flexible. And despite the considerable thickness of the undergarment, I enjoyed a sense of freedom of movement as if I wore only a tropical wetsuit.

Above all, I felt I could move faster. Usually, I pedal like a tugboat to propel my bulk and twin tanks forward through the water masses. Instead, I now felt like I was gliding smoothly.

Reaching out for the first stage behind my neck was easy and unhampered, too. On my regular suit, the seams under the arms make a stretch

like that a real struggle, and worse still, the resulting yank along the seams tends to pull my sleeve cuff out of position and let in water. Do I hate it when that happens? You bet.

In contrast, the Fusion just stretches. I could even clinch my hands behind my back.

A minor detail that I was less happy about was the placement of the shoulder valve, which I found placed too far on the outer side of the arm. It was just out of a reach for a relaxed grasp for it. Wearing undergarments and a BCD, I could only reach it if I also brought my whole right shoulder as far forward as possible and really stretched the whole limb. If I could have it tailor-made, I would have that valve rotated an inch closer to my chest.



zipped models where the zipper usually extends a bit down the shoulders.

I got big shoulders, so getting my second arm contorted down the right sleeve without putting too much strain on the zipper required some delicate moves and nudging.

But these very minor gripes should not ruin the overall impression of a very well thought out and high performing suit that probably will set a new benchmark for drysuits, if it hasn't already.

The suit comes with rock boots, and the fabrication quality and finish felt very reassuring. Where it mattered—in the water—it outperformed any other suit I have tested. ■

www.whitesdiving.com

Bangaram Island

Diving Tropical India



ABOVE: Relaxation Bangaram style with lagoon steps away. TOP: Bangaram Island and its atoll

Text and photos by Charles Stirling

Dreaming of diving off an uninhabited tropical island? Doing this by liveaboard boat is one approach, but here, on Bangaram Island, one can live the island dream while staying on the island itself, which has enough infra-structure to make it comfortable.

The mainly submerged volcanic mountain range of the Chagos-Laccadive Plateau extends from the Indian Ocean into the Arabian Sea. At the southern end are the Chagos group of islands, which are British owned, but part leased to the United States for a secret military base. They are off limits even for the original inhabitants who have been trying to

return for many years.

The middle archipelago of islands, are the Maldives—an island nation well known to divers. At the northern end are the Lakshadweep islands, formerly known as the Laccadives. All of the islands rising out of the sea from this plateau are low lying coral atolls with associated sand banks and other coralline structures.

The coral growth has kept pace with land sinking and sea level rises, which have been happening for thousands of years giving, for divers, sheer vertical walls, shallow inter atoll bridges along with sandy lagoons to enjoy. Of course, the coral doesn't grow above the level of the sea surface; for island formation, storms or earthquake uplift are needed. Storms wash coral debris onto the top of underwater coral, but storms also mean some islands periodically disappear. The Chagos-Maldives-Lakshadweep Archipelagos are in a

dynamic state of flux.

I went diving in the Lakshadweep archipelago on Bangaram Island. India has been very cautious in allowing "outside" influences in this archipelago—firstly, to protect the local native culture, and secondly, to protect the fragile ecosystems.

India—to visit or just dive?

Never having visited India before, I chose to combine the diving trip to Bangaram with a visit to parts of the Indian mainland in one trip. I didn't know exactly what the diving would be like, as it has had little or no coverage. Would I regret not spending all my available time underwater?

I first heard about diving on Bangaram when I talked with two of the owners (Michael and Badu Dominic) of the family-run Indian CGH Earth resort group of environmentally-friendly hotels, and found out they



were both divers. The group owns the resort on this little known island. They highly praised the diving, so my excuse to visit India was sealed.

Getting to Bangaram from England

LAKSHADWEEP

Lakshadweep is the smallest union territory of India consisting of 12 atolls, three reefs and five submerged banks, with a total of 32 islands located between 200 and 400 km off the coast of the south west state of Kerala. Until recently, foreign visitors were not allowed. Now, you can visit by obtaining a permit in advance. Likewise, access was limited, first by infrequent ship, then slow ferry, until an airport was built on the island of Agatti, at first served only by a ten-seater aircraft. In 2007, Kingfisher Airlines started daily flights with a 70-seater turboprop plane. So, Bangaram Island is a rather special destination just beginning to open up. ■

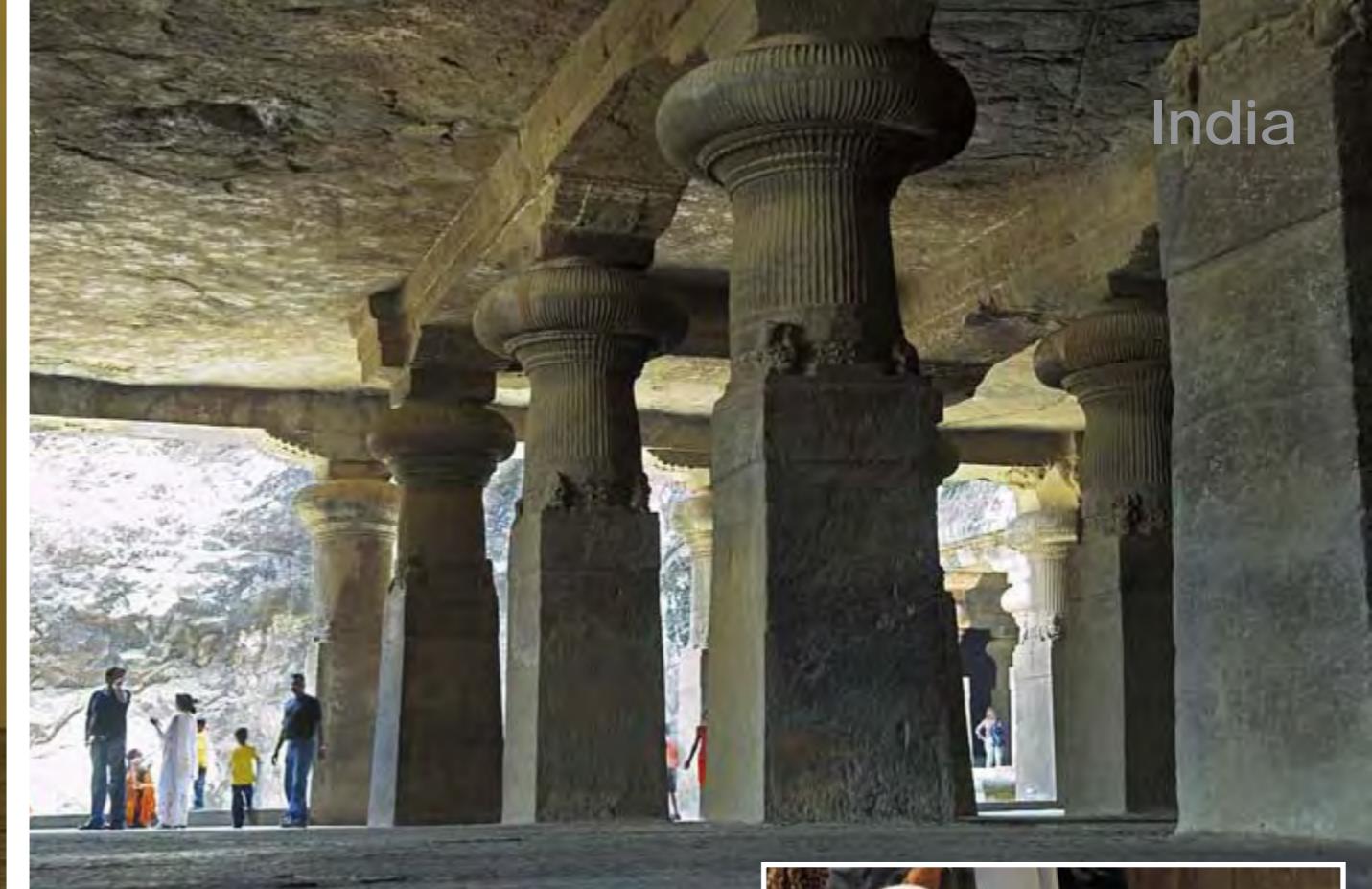
involved first a transfer stop in Mumbai, or Bombay, as everyone local still calls it. I booked this with a morning arrival and a next day internal flight to Cochin (or Kochi in other speak) so had a day to visit the city, and did the same on my return.

Mumbai is a crowded, frantic, hectic, busy city that is fantastic. It's way too big and too congested to see more than a tiny fraction of it in two days, but one still can get a taste of the place. The first thing I noticed was the relaxed friendliness of the people, and that most spoke at least some English. Then, I noticed the slow rush of vehicles to get somewhere, as I tried to walk across a road. As a pedestrian, you quickly learn to weave amongst the cars.

With a car and a guide—which is essential—I crammed in visits to the Gandhi museum, the "Gateway to India", various religious shrines including Elephanta Island, a riverside laundry, various street markets and more. Yes, there was poverty. Yes, people were

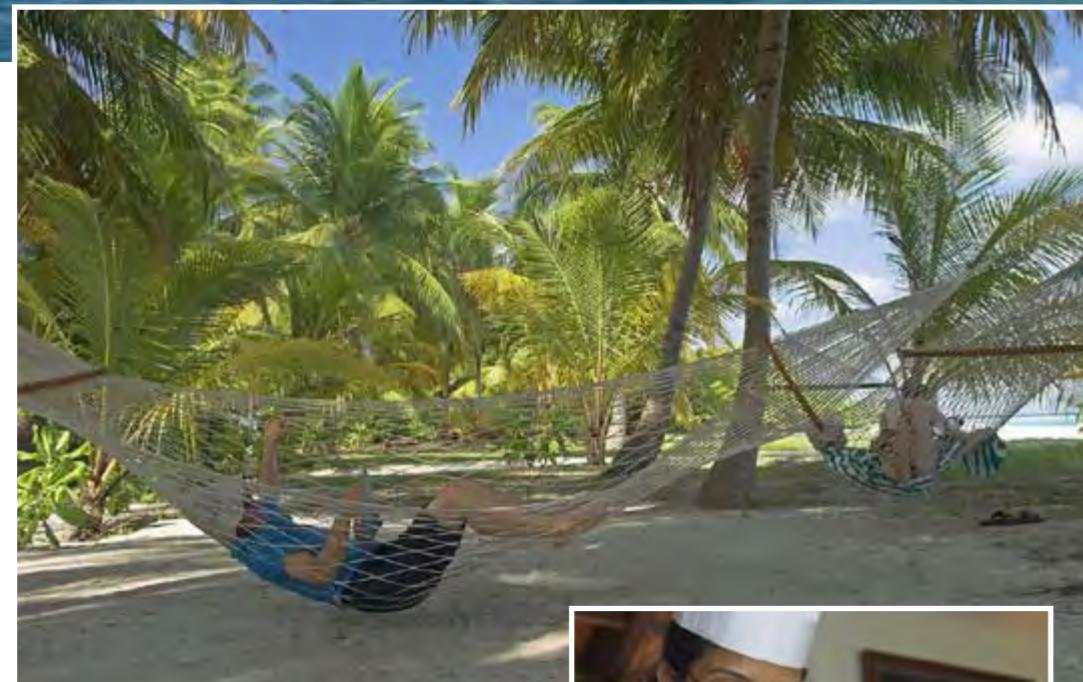
begging, but it never seemed oppressive—people were generally happy. Yes, some streets were litter strewn, but seldom worse than England could be with our new rubbish "maybe collect" policies. While, on the whole, I was pleasantly surprised how tidy much of the city was. I would love to go back for a longer stay. At least a few days in a big Indian city should be on one's "to do" list.

Cochin is the gateway to the Lakshadweep islands. I went via Mumbai, but direct flights from some European cities, from other eastern countries and other Indian cities do exist. Cochin is famous for its Chinese fishing nets, to be seen in any travel book of the area, and they do still exist and



CLOCKWISE FROM LEFT Chinese fishing nets at Cochin; Mumbai's Elephanta Island is both a religious shrine but also a simple pleasant location that locals visit to unwind from city congestion; Mumbai does have its street sellers; Crowded busy Mumbai





Getting there

Flying to Agatti was on Kingfisher Airlines—an airline reputed to have more reliable service than the ten-seater plane. Those of us going on to Bangaram were escorted out of the small airport to a thatch-roofed, open waiting area for passport and permit checking before seeing our bags manhandled over the beach to a little movable floating dock, which was pulled over to our boat moored just offshore. Following our bags, our group of newly arriving visitors sat back for the hour-long journey to our very own enchanted, tropical island surrounded by a turquoise blue sea.

Bangaram Island is officially classified as uninhabited, with only



ABOVE: Cooking demonstration, a popular pastime. Hammocks meeting their calling on Bangaram



CLOCKWISE FROM ABOVE: Bangaram Island seen from the sea; The small bar on the beach at Bangaram; Arrival on the little floating dock with dive boat nearby

the 80 or so resort staff—most of whom come from one of the other islands—and up to 60 visitors at any one time. So, does one really get to claim he or she has spent vacation time on an uninhabited island?

Accommodation is provided in one of 30 double bed chalets, each with shower and toilet, mini-bar, fridge and enough space that a cat wouldn't hit its head if you had one to swing, and electrical outlets that maintained power throughout the day and night.

Communal facilities included a library and games room, dining hall used for breakfast and lunch, beach bar, plus the water sports centre and, the all-important, diving centre. No roads, just paths, no motor vehicles, no TV, not even mobile phone coverage—so, it is a location for relaxation.

Dinner was served under the stars, buffet style, with a good variety of entrees always including a choice of two or more fish, chicken, or other meat and various vegetable dishes, plus a couple of types of rice. We had barbecued tiger prawns one evening that were REALLY difficult not to overindulge in.

The food here, as in all the group's offerings, was a little bland for me, probably cooked for the more

normal Western visitors—not one used to cooking his own rather spicy concoctions at home. The food suited my partner just fine.

The beach bar was the only source of alcohol in the Muslim Lakshadweep islands, where it was illegal otherwise. So, an after-dive beer or wine with dinner was available.

The resort was very environmentally conscious with rainwater collection and storage for most water needs. The used water was treated and reused for watering plants. Electricity was generated





with solar cells with battery storage and diesel generation was only used late at night when batteries ran out. Plastics were discouraged, and any that did come to the island were returned to the mainland for recycling.

Equipment matters

Being here for the diving, my partner and I visited the dive centre in the morning after arrival to sort out hire of equipment

as we had only brought wetsuits, masks, camera equipment and dive computers with us. Long flights and weight limits had put constraints on what we could bring with us gear-wise. But bringing our own wetsuits proved sensible as the hired ones were shorties—fine, if you keep swimming, not so good if you take your time, even in the 30°C water.

Bangaram Island is inside a 10 km by 8 km atoll, joined by one other similar sized



uninhabited island, Tinnakara, plus two very small ones, Parali-I and Parali-II.

Looking at local charts, it appeared as if the areas outside the surrounding fringing reef dropped to depths of over 1000 metres on three sides of the reef. In places, these depths reached up to a couple of kilometres offshore. Others were relatively near, but deep depths were generally found only after more gently sloping contours.

On the side facing Agatti, a wide sandy bank bridged the two islands at 11 metres depth. All of this is important for the coral, as you will see later.

I asked Sumer Verma, the dive centre owner, about his diving customers. He said that over half were repeat visitors from many parts of the world. In general, they were vacation divers, often ones wanting to chill out with the island life. Some had bad experiences elsewhere (evidently many from a first experience that went wrong in the Red Sea). Others, such as us, needed to "get wet" while on a wider visit to India.

All the diving took place from a slow hard boat, similar to the one that brought

us to the island. It had bottle storage racks, wooden benches, a proper toilet inside and an insulated sunroof. So, it was comfortable for up to the 12 divers that it could carry, but did not meet the standards, or needs, of Red Sea day boats, which have to cover longer distances. The dive boat did carry an oxygen kit, radio and life vests.

Being a slow boat, it did save on fuel—a positive environmental consideration for this very environmentally aware resort—but it meant that trips to all the dive sites along the outside of the fringing reef took 40 to 80 minutes to reach.

Site selection was made in the morning, dependant on the weather but mostly on the experience levels of those who

turned up. The island life was relaxed; guests might or might not do what they planned the evening before, making for awkward dive planning. This was of little consequence except for photographers

travel



who wanted to set up lenses. The boat had no provisions for photographers; not even a rinse tank was available when I was there, let alone a flat dry area for setting up. However, the fact that the dives took place in a relaxed atmosphere with 30°C water, time limits of an hour and a none too frantic pace led by the dive guide made up for this problem.

Remnants of an old wooden

depth range with a few a little less. One site, "The Grand Canyon", was a narrow fissure extending below sport diving limits. Shallower sites were available, and the first steps in training were done within the sheltered lagoon. Looking at the local charts, there should have been some stunning vertical walls to see. However, since they start at about 30 metres, these are not on offer.

All dives started with a back roll, then

CLOCKWISE FROM LEFT: Divers did see coral; Sharks were found, just not as many on my dives as other weeks; Feather star; The agricultural area of Kerala grows pineapples so fresh pineapple is a common inexpensive food

shipwreck, the Princess Royal, within the lagoon can be found, but in practice, it is coral reef diving that is the primary draw, as the wreck has only a few exposed timbers.

Most chosen sites were in the low 20-metre

a surface meeting to exchange OK signs, and finally the group descent. The dive sites were often on gentle sloping reef faces, so divers started shallow before finning deeper. Dives then meandered back up, giving excellent multilevel profiles for those hour long dives.

The surface interval of 60 to 90 minutes was spent relaxing on the boat with fresh pineapple slices and cakes, which set us up for the second dive that had us back at the resort by 2:30 for lunch.

Afternoons were spent unwinding on the beach, snorkelling, kayaking, going deep sea fishing, getting an ayurvedic treatment or going for a walk—it's a small island with enough to do if you're not expecting a raving disco or late night clubbing.

A number of sharks and a few large rays were seen on Manta Point, but that was the day before my dive. Isn't it always just before or after your dive?



Cleaning station for oriental sweetlips



India



On my dive, marine life was limited to a few hawksbill turtles, fish of the oriental sweetlips variety at cleaning stations, eels popping out of holes, anemone fish doing their thing, and the rest of the expected coral reef fish and invertebrate life hiding in holes.

Shark sightings arose at Entrance Point with a couple of nurse sharks sleeping under a ledge. We saw a ray and a clutch—if that's what you call 15 or more together—of spiny lobster at Bangaram Reef, cushion stars, giant clams, bannerfish, trevally, wrasse, garden eels, butterflyfish, parrotfish and more at many if not all the sites. Yes, fish life is reasonably good. A guide book to the Maldives will work relatively well here with some minor changes.

The big stuff is less common and tends to visit only in November-December with the cooler waters. Manta ray cleaning stations haven't yet been found, and the sightings are few and only made during those cooler months.



Since most of the clientèle were vacation divers, the organization of the diving for them adhered to a policy that had the divers following the guide who led the group. Strict safety was emphasised. The chance to stay and watch animal behaviour was limited if the group lost interest, but interesting animals were pointed out during the dive giving everyone an opportunity to see marine life. More experienced divers were provided with their own guide on the same site, if numbers worked out.

Warm waters

The warm, 30°C water made for pleasant diving, but the downside was the presence of coral bleaching, with much of the hard coral dead. Small patches

and stands of good coral were present on every dive and recovery was slowly happening.

The warming effect of the 1998 El Niño affected the whole of the Chagos-Maldives-Lakshadweep submarine mountain range. Recovery seems much slower here at Bangaram. It is possible that the Maldives made a quicker recovery due to stronger, cooler deep ocean currents. The top of the mountain range around Bangaram atoll and Agatti is both large and shallow, so the sun warms the water, while the prevailing currents—being from the west—are possibly pushing the newly warmed water over the reefs slowing regeneration.

Agatti is at the southwestern side and suffered less damage during El Niño.

Recovery seems to be better. We did get below a thermocline at one point and found better coral condition. The poor coral is a deterrent to making the trip, but it shouldn't be a show stopper for an occasional diver, or for anyone making this excursion a part of seeing more of India.

In addition to diving on Bangaram Island, diving is also available on Agatti and Kadmat Islands, which I wasn't able to try. Both of these islands supposedly have less coral bleaching yet somewhat similar coral diving. Accommodation on both of these islands is more basic. Kadmat is a few hours' boat journey after

THIS PAGE: Tea farm in the mountains near Thekkadi; Kettuvallam or houseboat on the Kerala backwaters; Wild elephants at Periyar



arriving in Agatti. None of the islands and nearby seas are really fully explored. It is still relatively virgin territory, with the possibility of good new sites yet to be discovered.

Did I err?

Having come to the end of my stay on Bangaram, could it be said that I erred in choosing to make my first trip to India a mix of diving and visiting some of the mainland? No. The other guests and I enjoyed the dive sites of the island, and the resort was great, but the diving wasn't world class. The trip as a whole was in the world class category and was enhanced by time spent underwater.

Cochin and Mumbai were gateways worth seeing. The remainder of the time was spent

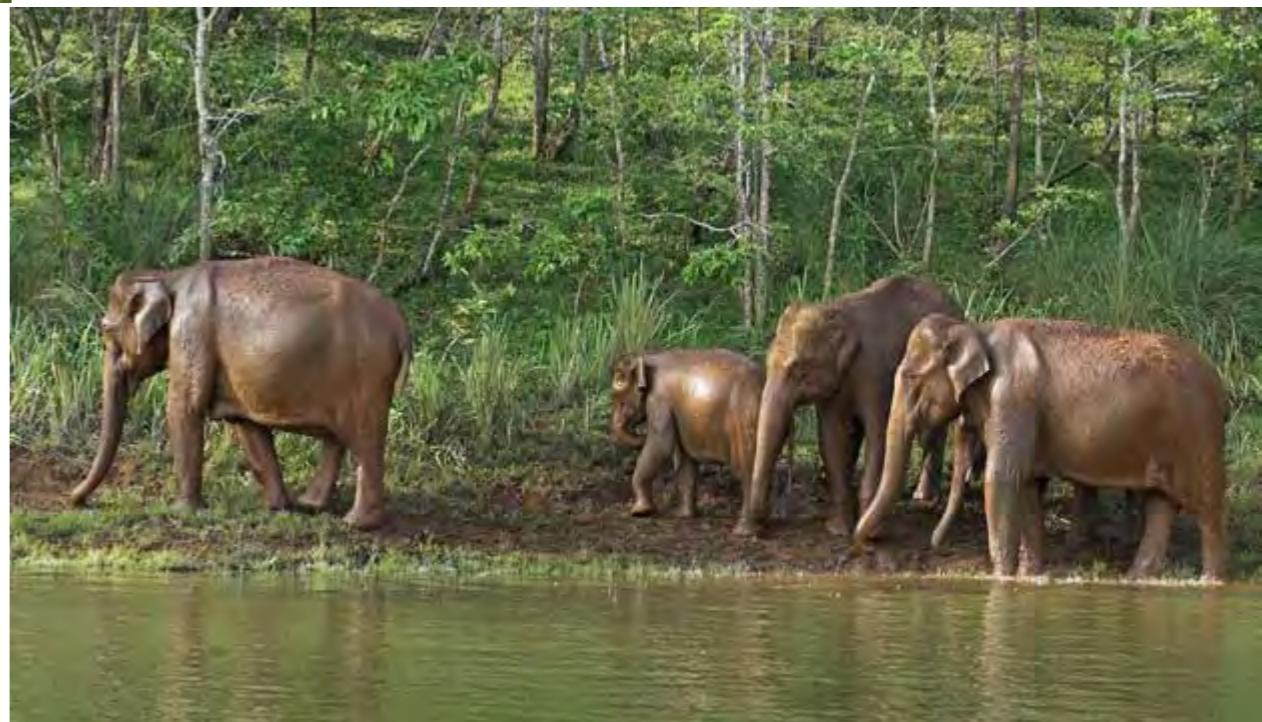
visiting a little of the state of Kerala beyond Cochin.

Kerala

Kerala is coastal—well known for its coconut palms growing along its 1000 plus miles of interconnected lakes, rivers and canals that make up the backwaters. Further afield are long stretches of sandy beach, rugged mountains, tea plantations, agricultural areas, and historic and religious centres of many flavours.

This isn't the article for extensive coverage of all the attractions, but a short mention might show why a combined diving and sightseeing trip is worth considering. I only just scratched the surface of what there is to see in this small green state of India.

The backwaters are on the doorstep of Cochin. I went to Coconut Lagoon, accessible by boat, looking first at what





could be seen by land, with nature and village walks. Then, I spent a night out on a Kettuvallam (Rice Boat) built as a houseboat.

These houseboats varied in what they offered, but most will effectively offer a high class private floating hotel room with full amenities—OK, a private bedroom, toilet and shower with meals cooked just for you. They ply the waterways allowing easy viewing of life as the locals live it. Locally, people often travel by canoe or boat for nearly everything—to the rice fields, for fishing, even shopping. In a way, you become some part of this world.

The backwaters themselves are

interesting environmentally, as much of the adjacent land is below sea level with dykes holding the water back. Sea water is let in seasonally to flood the waterways, which helps to control the water hyacinth invasion.

It's an area undergoing economic changes with coconut palms replacing rice fields in some places. More tourists visit now with the houseboats, and land reclamation is taking place. The area grows a lot of coconuts with local home industries producing coir products, spinning the coconut fibre into twine, weaving traditional door mats, and more.

The region is worth seeing maybe sooner rather than later. There's just too much to see—this is the only real problem.

The beaches in Kerala are—well, beaches—long white sandy places with water at one edge—less crowded, less touristy than Goa just to the north and lacking the wild nightlife. If you want to continue the Bangaram style beach life, it's worth considering coming here, as I did for a moment at Marari Beach. Not being much of a beach bum, I took a three-hour tour by tuk-tuk to see other fishing villages.

Driving inland, coconuts give way to rubber tree plantations and pineapple farms in this agricultural region; then, impressive mountains become apparent as foothills become steeper, valleys spread out

below, and the road switchbacks up sheer cliffs. Near the top, one can find tea plantations sprouting, spices growing, forests and nature reserves.

I made it up to the tropical rainforest and Periyar Tiger Reserve near Thekkadi to visit a tea factory as part of the drive. No tigers were seen at the reserve, not that it was really expected, as only about 12 wild ones are left. I took a long hike in the reserve, then a boat ride on the lake, which shows off the wild elephants, water buffalo, monkeys and deer.

The reserve is doing its thing on the environmental side—converting local tribal people from poachers to game wardens and tourist guides. The park boasts a diverse flora of over 2000 species of flowering plants, many of which are endangered, including many species of orchids, grasses and trees along with the diverse animal life.

I found these explorations great fun as well as educational but wondered what families, and in particular, what kids would think about it all. Was it very much an adult trip? So, I asked a few English families with kids what they thought. I was surprised by the responses, summed up by one ten-year-old, who said that their Kerala trip—not dissimilar to mine—was the best holiday she had ever had. She said, "It has the climate, colour, food, friendly people, things to do, beaches, mountains and animals,"



and she didn't want to ever go home.

Environmentalism

Taking this trip happened slightly by accident following a certain conversation about a hotel's environmental endeavours. The CGH Earth group are proud of what they are trying to do, something beyond the normal. So, what did I find when I visited?

First, conservation happens in the background, something a guest



CLOCKWISE FROM FAR LEFT: Coir, or coconut fiber, being spun into twine in a small cottage industry seen in much of coastal Kerala; Rice fields as seen from a backwaters houseboat cruise; Chinese fishing nets at Cochin; Canoes are the local transport on the backwaters

India has a reputation in some quarters as a country to avoid seemingly due in part to the poverty there and less than great food hygiene. Yes, many are poor, but having stayed in the admittedly tourist-oriented hotels, I found food hygiene up to Western standards. Food outside the hotels also seemed at least reasonable and delightfully spicier. Streets were generally clean (in Kerala, often cleaner than streets I see frequently in England). India is changing. ■



India



CLOCKWISE FROM ABOVE: Even the local shop arrives by canoe in the backwaters; Bangaram diving; The earthworms seemed to like the concrete homes at Spice Village; Water treatment at Coconut Lagoon



finds out only by asking, and I was asking. Seeing the practice in action was impressive. There were a variety of initiatives at different locations, each hotel looking at its local situation to minimise impact for that location. They were not using a blanket, unthinking "one-fits-all" approach.

All the hotels did substantial recycling. Plastics and metal cans were sent to commercial centres, organics composted using either anaerobic digesters or earthworms—sometimes for fuel—and grey water was used for gardens.

These days, 'recycling' is often just a catchword for governments or establishments to duck behind. Here, at Spice Village, it was impressive seeing over 70 good size wormeries lined up taking compostable waste with the output used on the hotel gardens or in mushroom growing bags.

Coconut Lagoon used both worms and heated anaerobic digesters (heated by burning other waste) to produce methane used for cooking stoves. Tree cuttings might be chipped for mulch or composted.

Varied rainwater catchment and storage systems were in use. The reverse osmosis water purification plant was impressive at one hotel. Others used less water, so had simpler smaller systems.

The solar cells on Bangaram with

battery backup were necessary as no supply grid existed. On the mainland, some electricity might be solar cell generated, but grid supply was often used, as this helped to support supply to the local communities who otherwise wouldn't use enough to justify making it available.

Local materials were used in buildings—indeed, the older buildings had been rescued, moved and rebuilt. Local people filled most of the staff positions. The Kettuvallam boat was commissioned to be built using the traditional practice of stitching planking together with coir twine—a building practice that is now being lost as nailing is cheaper.

The CGH Earth group is doing an excellent job with eco-tourism. It's almost worth visiting just to see how tourism can turn "green", and they accept it as an ongoing, evolving practice. ■

Both the India Tourist Office and CGH Earth Group went out of their way to be helpful in organizing this trip. The author and X-RAY MAG would like to thank both. Links:

CGH Earth www.cghearth.com

Government of India Tourist Office www.tourisminindia.com

Ministry of Tourism

www.incredibleindia.org

fact file

India



SOURCES: US CIA WORLD FACT BOOK,
SCUBADOC.COM

History Around 1500 B.C., Aryan tribes from the northwest moved onto the Indian subcontinent; they integrated with the earlier Dravidian peoples and created the classical Indian culture. In the 4th and 3rd centuries B.C., the Maurya Empire united much of South Asia and reached its height of power under the reign of Ashoka. The Gupta dynasty (4th to 6th centuries A.D.) ushered in the Golden Age when Indian science, art, and culture flourished. In the 8th century, Arab incursions began, then came the Turkic in the 12th century followed by European traders in the late 15th century. By the 19th century, political control of virtually all Indian lands was assumed by Britain. A vital role was played by Indian armed forces in the British army in both World Wars. But not all en-



joyed British colonialism. Nonviolent resistance was led by Mohandas GANDHI and Jawaharlal NEHRU who helped to bring about independence in 1947. A division of the subcontinent led to the establishment of the secular state of India and the smaller Muslim state of Pakistan. In 1971, East Pakistan became the separate nation of Bangladesh after a third war between the two countries. In 1998, India's nuclear weapons testing spurred Pakistan to conduct its own tests later that year. Kashmir is an ongoing dispute between the countries, but tensions have been decreased by discussions and confidence-building measures since 2002. India's impressive gains in economic investment and output is challenged by pressing problems including significant overpopulation and extensive poverty, ethnic and religious conflicts, and environmental degradation. Government: federal republic Capital: New Delhi

Geography India is located in Southern Asia. It borders the Arabian Sea and the Bay of Bengal, between Pakistan and Burma. Coastline: 7,000 km.

Wild elephant takes a mud bath at Periyar near Thekkadi



RIGHT: Location of southern India on global map
FAR RIGHT: Location of Bangaram Island on map of India



Terrain: In the south, the upland plain (Deccan Plateau), leads to rolling plain along the Ganges, while deserts lay in the west and the Himalayas in north. Lowest point: Indian Ocean 0m. Highest point: Kanchenjunga 8,598m.

Economy India's economy is made up of traditional village farming, modern agriculture, handicrafts, a broad range of modern industries, and a variety of services. Growth is primarily due to services, which account for more than half of India's output but less than a third of its work force. Most people work in agriculture, so the United Progressive Alliance (UPA) government supports an economic reform program that develops basic infrastructure thereby improving the lives of the rural poor while boosting economic performance.

Since 1997, a ten-year average economic growth rate over 7% reduced poverty by about 10%. India has large numbers of well-educated workers skilled in English, so the country has pushed to become a major exporter of software services and software workers. The enormous and growing population is the fundamental social, economic, and environmental problem.

Climate varies from tropical monsoon in south to temperate in

north. Natural hazards include droughts, flash floods, as well as widespread and destructive flooding from monsoonal rains, severe thunderstorms, and earthquakes.

Environmental issues Tap water is not potable throughout India. There is soil erosion, deforestation, overgrazing, desertification, air pollution from industry and traffic emissions. Water pollution results from raw sewage and agricultural runoff of pesticides.

Population 1,147,995,904 (July 2008 est.) Ethnic groups: Indo-Aryan 72%, Dravidian 25%, Mongoloid and other 3% (2000). Religions: Hindu 80.5%, Muslim 13.4%, Christian 2.3%, Sikh 1.9% (2001 census). Below poverty line: 25% (2007 est.). Internet users: 60 million (2005)

Currency Indian rupee (INR)
Exchange rates: 1EUR=63.33INR,
1USD=45.56INR, 1GBP=80.05INR,
1AUD=36.17INR, 1SGD=31.54INR

Language Hindi is the national language. English has an associate status, however, it is used for national, political, and commer-

cial communication. In Kerala, Malayalam is spoken, but almost everyone speaks English as a second language. Languages spoken in India: Hindi 41%, Bengali 8.1%, Telugu 7.2%, Marathi 7%, Tamil 5.9%, Urdu 5%, Gujarati 4.5%, Kannada 3.7%, Malayalam 3.2%, Oriya 3.2%, Punjabi 2.8%, Assamese 1.3%, Maithili 1.2%.

Health No compulsory vaccinations are required for Bangaram. It is not in a malaria zone, however, Polio, Tetanus, Typhoid and Hepatitis A vaccination is recommended. Please check with your doctor. In other areas of India, there is a high degree of risk for food or waterborne diseases including bacterial diarrhoea, hepatitis A and E, and typhoid fever as well as vectorborne diseases such as chikungunya, dengue fever, Japanese encephalitis, and malaria. In addition, animal contact diseases such rabies and highly pathogenic H5N1 avian influenza have been found in India, but pose negligible risk.

Decompression Chambers
Chamber Complex
Indian Naval Hospital Ship Asvini
Colaba, Mumbai 400 005 India
Tel.: 2151666

Diving Season
Bangaram and Kadmat:
October to late April
Agatti: October to early April
The resort on Bangaram is open all year. Monsoons start in May.

Time Zone GMT +5.5
(Look out for that odd half hour)

Travel Air India flies to Mumbai; Indian Air to Cochin; Kingfisher Airlines to Agatti; Air France to Cochin direct from Paris; Oman Air from Gatwick with Muscat as the exchange to Cochin. Some flights go through Dubai to Cochin.

Web sites
Lacadives, Bangaman
www.lacdives.com
Agatti Diving
www.divelineagatti.com ■

ecology



Text by Arnold Weisz

The ocean has been regarded as a global commons whose resources are inexhaustible and therefore free for the taking. The need to manage and protect the few valuable resources left in the ocean is requiring an ever increasing financial participation from governments, businesses and the general public.

Management doesn't come for free. In a report by the World Wildlife Foundation (WWF), it revealed that a survey of over 80 Marine Protected Areas (MPA) in 2003, found that a global MPA network covering 30 percent of the world's oceans might cost between US\$7 billion and US\$19 billion annually to run. Total government spending worldwide on protected areas has been estimated to be US\$3.2 billion per year, but there are no statistics available that show how much of these US\$ 3.2 billion were specifically allocated to marine and coastal protected areas.

This huge under funding of the park management around the world has created a map wadded with paper parks. Countries have committed themselves to establishing networks of Marine Protected Areas by 2012 under the Convention on Biological Diversity, but only 0.5 percent of the oceans currently protected is a poor start towards that very essential goal, said Christian Neumann, Conservation Officer for WWF International Centre for Marine Conservation.

Pay & Play

JIM GERAL PE/MARINE PHOTOBANK

Siete Pecados Marine Park, was established in 2004. Area was subjected to blast and cyanide fishing in the late 90s. With the collaborative efforts of NGOs, FAPs, Local Government Units, and other volunteers, the reefs are recovering and fish recruitment is occurring. It is now one of the tourism destination areas in Coron, Palawan. Philippines



Examples of daily and annual diver park user fees throughout the Caribbean:

Bonaire Marine Park
Netherlands Antilles: \$ 25
Soufriere Marine Park
St Lucia: \$4 - \$12
Saba Marine Park
Netherlands Antilles: \$3 per dive
Cozumel Marine Park Mexico: \$2

Pigeon Island Park
St Lucia: \$5 - \$15
Half Moon Cay Belize: \$5
Hoi Chan Belize: \$2
SBWEMP Honduras: \$5
Isla Bastimentos Panama: \$10
Utile Marine Park Honduras: \$3

Paper parks

If you look at maps, there are a lot of protected areas on the planet. Many more on land than at sea. However, only a very small percentage of these declared protected areas exist in actual



WWW.KAHEA.ORG



LEFT: Schooling Pennantfish, Pyramid and Milletseed butterflyfish, *Chaetodon miliaris*, at Rapture Reef, French Frigate Shoals, of the Northwestern Hawaiian Island now known as part of the Papahanaumokuakea Marine Monument (inset). It was the world's largest marine protected area when it was established in 2006

NOAA

Pay & Play

Sea turtles, and other species can be seen around Menai Bay Conservation Area in Zanzibar, Tanzania

fact. Most are paper parks in which no management occurs. The motivation to establish protected areas is often based on the perception that such areas enhance a country's competitiveness in the tourism sector. The cost of protecting the designated areas are often insurmountable, especially for poorer countries.

I wrote about such an example in X-RAY MAG issue 22, where the local environment protection agency of São Paulo state (Secretario Meio Ambiente SP), Brazil, only received funds in 2005 to buy a boat to patrol the

state's marine parks. The state's marine parks were left virtually unprotected up to then, after the park was created in 1993.

There is a difference between rich and poor countries when it comes to financing of protected areas. Research does show that government resources are the dominant source of funding for MPAs in developed countries, whereas in developing countries, foreign assistance and park entry fees provide a relatively larger part of their revenues.

You can't really blame poorer countries that they choose to maybe spend their revenues on infrastructure or in aiding a struggling population, rather than forking out money on park rangers and patrol boats.

As the whole world is more and more linked together, especially concerning natural resources and the effects of global warming; the burden of environmental management must be shared by us all. Given the limited ability of most governments in the developing world to meet the costs of management, alternative sources of revenue must be explored.

Natural resource

On the other hand, governments can in many cases be persuaded to increase their annual budget allocations for con-

MNARANI NATURAL AQUARIUM

THIS AQUARIUM WAS STARTED IN 1993 IN LOCAL EFFORT TO CONSERVE SEA TURTLES

SEA TURTLES NATURAL HISTORY

- SEA TURTLES HAVE EXISTED FOR 170 MILLION YEARS
- OF THE 8 SPECIES OF SEA TURTLE, 4 ARE FOUND IN ZANZIBAR: GREEN, LOGGERHEAD, LEATHERBACK AND HAWKSBILL. ONLY THE HAWKSBILL AND GREEN NEST HERE.
- DIET: HERBIVORES; SEA GRASS AND ALGAE
- DESCRIPTION: SMOOTH BLACK TO YELLOW-BROWN SHELL, NON-OVERLAPPING SCALES
- HUNTED FOR ITS MEAT AND EGGS.
- SEX OF HATCHLING IS DETERMINED BY THE TEMPERATURE OF THE SAND IN WHICH EGGS ARE LAID: ♀ - HIGHER ♂ - LOWER
- 1000 HATCHLINGS = 1-2 ADULTS DUE TO PREDATION.

THE GREEN TURTLE

THE HAWKSBILL TURTLE

- DIET: SPONGES AND FISH
- DESCRIPTION: RED, YELLOW AND BLACK SHELL WITH JAGGED EDGE
- "TORTOISE-SHELL" PRODUCTS ARE ACTUALLY MADE FROM THE SHELL OF THE HAWKSBILL.

BUYING ANY PRODUCTS MADE FROM ENDANGERED ANIMALS ENCOURAGES THEIR SLAUGHTER.

PLEASE SUPPORT OUR CONSERVATION ENTRANCE FEES 2 \$ OR 2500 T SHS

SPECIES IN ZANZIBAR KASA WA ZANZIBAR

servation and sustainable management of marine ecosystems if they can be shown that marine resources generate substantial economic benefits in the short, medium, or longterm.

Just a few decades ago, a natural resource was something you could dig out of the ground or pump up from the bottom of the ocean. In the last few years, many developing countries have seen that eco-tourism also taps into one kind of natural resource—clean and unspoiled oceans.

Existing revenues from fisheries and tourism can dramatically decline if coastal wetlands and coral reef ecosystems are not adequately protected. For a MPA, to succeed in reaching its goals regarding improved water quality, reduction in fishing pressure, and protection of habitat, suitable management methods must be adopted and enforced.

Sadly, this is not always the case; a report by the World Bank admits that only

30 percent of Caribbean and 10 percent of East Asian MPAs have achieved their management goals. A further report reviewing the success of marine parks found that only 9 percent achieved their management objectives. This means that of the world's 361 million km² of ocean, less than 1 percent is covered by MPAs, with 71 percent appearing to have no management scheme at all.

Economic indicators, such as a marine resource's contribution to a country's fiscal revenues or to foreign exchange earnings, can therefore be a great help in making a compelling case for marine conservation. Tourism is the world's largest industry employing 195 million people and contributing over 10 percent of world Gross Domestic Product (GDP) according to the World Travel and Tourism Council. Marine-based tourism cruises, scuba diving, yachting, whale watching, and sun-sand-sea tourism to destination beach resorts generates bil-



ecology

lions of tourist dollars. Often can combined efforts by governments and non-governmental organizations be a good match. The politicians have to put in place legislation and longterm policies. While the management of the parks can be handled by non-governmental agencies. The latter often also provide necessary education tools, which is essential to get the local communities to support the efforts.

My ocean

MPAs have the dual benefits of protecting both the coral reefs and fish populations that make the area more attractive for the user. There is a variety of financing mechanisms that include government subvention, international assistance, personal donations, commercial and bi-lateral debt swaps, trust funds and entrance fees.

The funds necessary to maintain and manage a park can be costly, as even a small park with few staff can have an annual budget exceeding US\$100,000. The most frequent way divers contribute to marine park management is by paying entry fees. This kind of revenue system has been set up in amongst other places, Bonaire, Egyptian Red Sea, Indonesia and Tanzania.

Scuba divers are getting used to this kind of "pay and play", or user oriented, fees when diving in marine parks. Pay per use has been a great success for financing protected areas, and additionally, has had a very positive effect on other aspects of life in several countries. It's becoming as natural as paying to see a movie at the cinema. ■



Map of Bonaire and Klein Bonaire showing the marine reserve areas on the leeward side marked in red along the coast. In contrast to the marine park, the marine reserve permits no water entry for snorkelers and divers at all, and therefore could be considered the most pristine areas on the island. (Image courtesy of NOAA Bonaire 2008 expedition)

Success Stories

Bonaire Marine Park

Since its creation in 1979, the Bonaire Marine Park has firmly put the tiny Caribbean island on the scuba diving map. The marine park extends from the high water mark to a depth of 60 metres/200 feet. It encompasses the entire coast of Bonaire, including Klein Bonaire, occupying about 2,700 hectares. Bonaire Marine Park is managed by a nongovernmental organization through collaborative agreements with government. These extra governmental management arrangements allow greater flexibility in the establishment and administration of revenue generation systems within the framework of enabling government legislation and policy. The park maintains more than 100 public moorings and conducts extensive scientific research. The park has succeeded in becoming an integral part of the island's philosophy, including virtually all of the island's population

of about 12,000. The inclusive approach has paved the way for a healthy and sustainable tourism industry on the Caribbean island. The park has eliminated destructive fishing practises and discharge of polluted ballast water. The park is solely financed by admission fees. www.bmp.org

Bunaken National Marine Park

The Bunaken National Marine Park was formally established in 1991 and is among the first of Indonesia's growing system of marine parks. Some 20,000 people live on the natural resources of Bunaken National Marine Park. Although there are inevitable conflicts between resource protection and use by people, the Indonesian government is taking a fairly unusual and pragmatic approach to park management. Local communities, government officials, dive resort operators, local nature groups, tourists and scientists have played an active role in developing exclusive zones for diving, wood collection, fishing and other forms of utilization. In Bunaken National Park in Sulawesi, Indonesia, for example, employees in the park's important tourism sector earn US\$144 a month compared to fishermen at only US\$44 a month. Bunaken Marine Park has become an important example of how Sulawesi, and the rest of Indonesia, can work to protect its natural resources. The entrance fee system has been adapted from the



Bunaken Marine Park

well-known Bonaire Marine Park system, and the proceeds from the sales of the entrance tags are managed by the Bunaken National Park Management Advisory Board (BNPMAB), a multi-stakeholder board of which NSWA is a member. The system has been very successful in raising over \$250,000 for conservation programs in the Bunaken Marine Park since its inception in 2001. The funds are controlled by a multi-stakeholder management board comprised of the North Sulawesi Watersports Association, villagers from the 30 villages in the park, local tourism, fisheries and environmental government agencies, and the local university's marine sciences department. This setup ensures that the money collected is directed to the most important programs needed in the park. www.sulawesi-info.com/bunaken.php ■



Tailgating the lone dugong, KAT, on Cocos (Keeling) Islands. Photographed by Karen Willshaw ~ underwater.com.au member

Bunaken Marine Park

www.underwater.com.au

dive in.
explore.
discover.

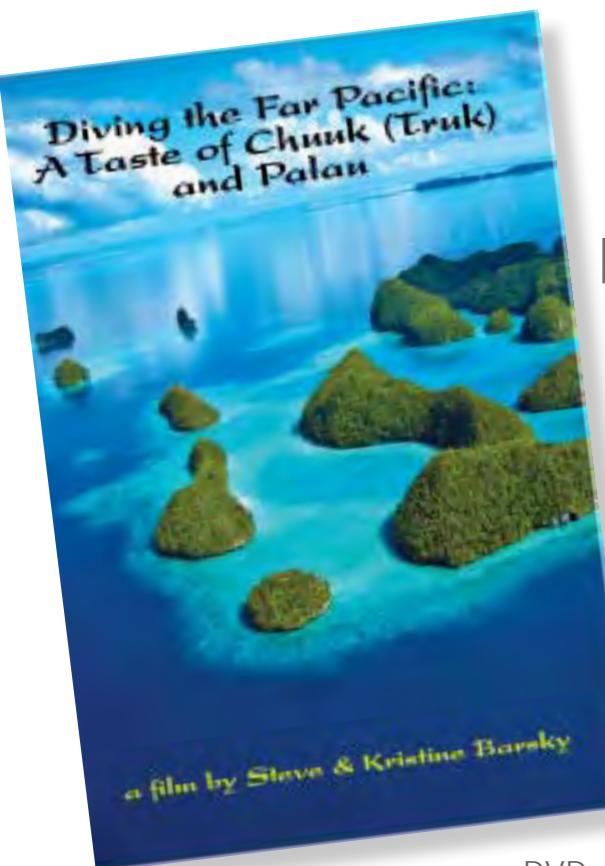


media

Books Film DVDs CDs

Edited by Catherine GS Lim
Simon Kong & Gunild Symes

POINT & CLICK
ON BOLD LINKS

Diving the Far Pacific

—A Taste of Chuuk (Truk) & Palau

A film by Steve & Kristina Barsky. If you are planning to visit Chuuk or Palau for the first time, be sure to get hold of this very informative documentary DVD. The folks at Hammerhead Video have put together a very nice package of two separate videos in one

DVD. *A Taste of Chuuk* runs for 34 minutes, while *A Taste of Palau* runs for nearly 20 minutes. Both give a very good idea of what to expect for those planning a first visit and makes a good reference for anyone who has already been there. The information is presented wreck by wreck starting with the *Fujikawa Maru* and ending with the *Shinkoku Maru*. The narrative gives good information on the Japanese wrecks, useful advice and warnings and interesting marine life, but the depth information should have been given in metres as well. The next video on Palau is a lot shorter, with topside interest as well as underwater such as the world famous jellyfish lake. This DVD is well put together with good music, historic information and good narration, but the videos weren't always bright enough at times, and the videography was a bit shaky. Total run time: 54 minutes. Published by Hammerhead Press. Standard Definition Widescreen NTSC All region video 16:9.

ISBN: 0-9740923-5-5

Sharkville

The great white sharks of Mossel Bay in South Africa are the subject of this documentary, which first aired in July 2008 as part of National Geographic's *Wild* series. The characteristics of Mossel Bay—calm waters, the presence of a seal population and only one cage diving company—made it a suitable venue for the study.

Sharkville represents six years of research by shark expert Ryan Johnson, and reveals much new information about these little-known animals. Amongst this include exciting footage caught on night-vision cameras in which great whites, for the very first time, were seen breaching and hunting seals at night. More than 600 hours were spent tracking the sharks. In addition, filming at night proved to be extra challenging as lights could not be used. Instead, lighting was obtained from moonlight through the use of an image intensifier.

Johnson, one of the scientists at the SA Marine Predators Laboratory (Sampla), also hosts the programme. Although there's been no news of the DVD release (yet!), the programme will be repeated on international National Geographic channels over the next five years, so do watch out for it!

Produced by Ryan Johnson, and Stefania Muller and Charlene Waite (both from Obsessively Creative)
Cameraman: Phil Vail



Still shot from the documentary film, *Sharkville*, by National Geographic

Deadliest Catch: Alaskan Storm

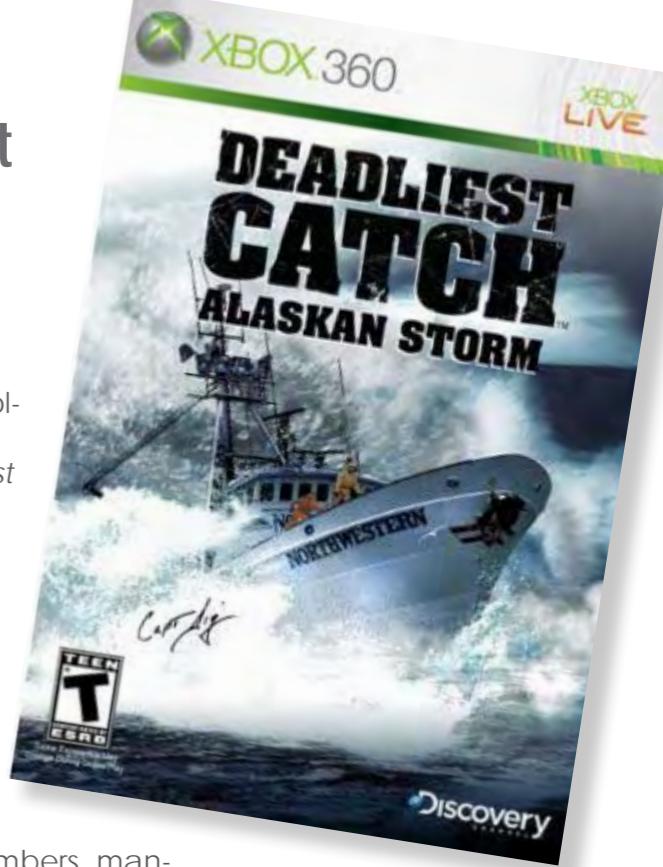
If you are a keen follower of the television series, *Deadliest Catch*, you'll want to get your hands on the computer simulation game, *Deadliest Catch: Alaskan Storm*. It means taking charge of your very own crab boat, choosing your own crew members, managing them, deciding where to fish for crab. In-between, you will have your hands full with side missions pursuing whale poachers, fixing hydraulic hoses, upgrading your ship, etc.

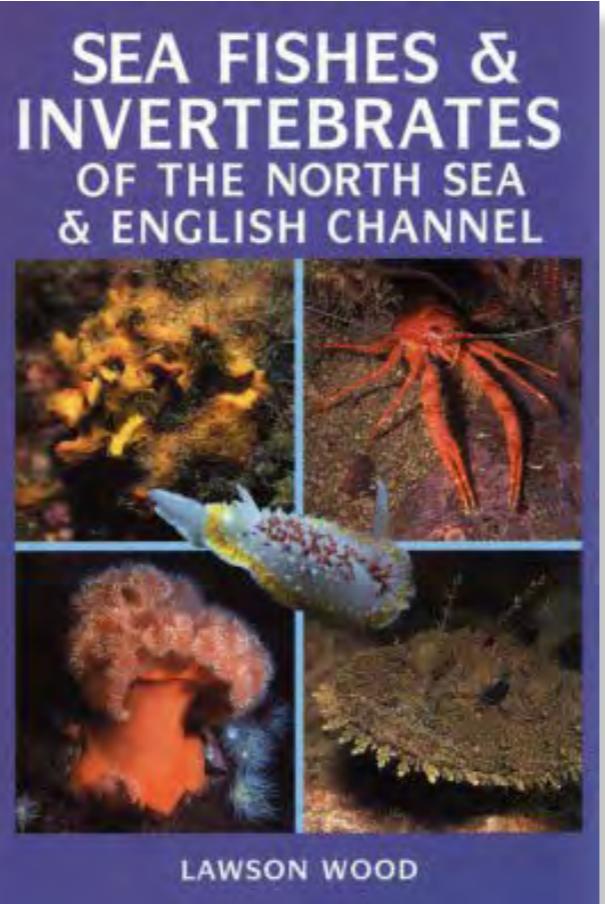
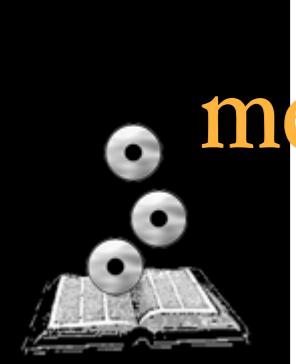
As the captain, you are stuck with having to play mother hen to your crew, helping them get out of trouble with their girlfriends, catering to their superstitions, dealing with injuries or simply just making sure that there's enough food on the table. After all, a happy crew is often the prelude to a successful operation.

Sounds like a tough job? Well, it is! However, players have the advantage of getting helpful input from Sig Hansen about running a successful crabbing operation. Players can either select a career mode or arcade-style games. Competing with other crabbing ships, players battle to be the first to locate the crabs and to get to the scene before anyone else.

The content in the game is based very closely on reality, right down to the characters, ships, harbour specs, weather, geological conditions, and of course, the crabs themselves, which means it's as close to the real thing as you can get without getting your feet wet—or putting your life in danger.

Developer: Liquid Dragon
Platform: Xbox 360, PC (pending)
Release: June 2008





Sea Fishes & Invertebrates of the North Sea & English Channel

By Lawson Wood. The North Sea has an astonishing profusion of marine life that exists in a relatively small, square region of ocean, which reaches the coasts of Britain to the west and the shores of northern France, Belgium, the Netherlands, Denmark, Norway and in the east, the far southwestern edge of Sweden. The first of its kind, this book includes more than 300 full-colour photographs and black-and-white line drawings. In the introduction, the formation of the North Sea is described as well as the habitats and types of animals that can be found there. Urgent conservation issues of this ecologically diverse area are addressed. The field guide section makes up the core of the book. It has accounts of fascinating species accompanied by identification photographs of almost 300 species of marine creatures, including fishes, molluscs, crustaceans, starfish, sponges and corals.

128 pages, paperback 20.6 x 14.8 x 0.8 cm
Published by New Holland Publishers Ltd (Sep 2008)
ISBN-10: 1847731252
ISBN-13: 978-1847731258

Magic Beneath the Seas —An underwater photographic journey



By Steven Kovacs

Magic Beneath the Seas is essentially a personal marine picture collection of more than 300 images by a Florida-based dental surgeon. The author strives to share with the reader the diverse and fascinating marine life that can be found underwater, hence the name, Magic Beneath the Seas. Animals such as the nudibranchs, manatees, sharks, crabs and reef fishes are featured and described in a very clear and informative style, which makes this book a good read for the nondiver as well. The information presented includes scientific names, the length of the subject, depth and location; all useful to give non-divers an idea of the size and distribution of the marine animals. Most of the images are of high quality, but some seem to have been blown up just for the sake of including them in the collection. A plus point is that the pictures include marine life from North America and the Caribbean and not just the Indo-Pacific. Well written and easy to read, this coffee table book makes a good gift for your diving and non-diving friends.

240 pages, 10 x 12 hardcover
317 photographs
Published by NGFL Publishing, Inc.—1st edition (April 1, 2008)
ISBN-10: 097920870X
ISBN-13: 978-0979208706

Shipwrecks of the Forth & Tay

Shipwrecks of the Forth & Tay

By Bob Baird. An upgrade of the successful previous edition, *Shipwrecks of the Forth*, this book is a new and improved version of the former. The new edition benefits in a large part to the vast amount of critical new information gathered by the author through 15 years of careful and diligent research. In the text, the details of each wreck are listed, including position, history and outcome. Maps and charts accompany the descriptions, which are illustrated with numerous dramatic photographs. Through the research of this comprehensive work, many exciting discoveries and recoveries were made by divers, including such items as ships' bells and pottery. As a result, mysteries have been solved, and

the identities of certain wrecks previously unknown have been able to be confirmed.

The author consulted many primary sources in the writing of this book, including official records from the Admiralty and Lloyds, official German U-boat records and Norwegian, Swedish and Danish records as well as first-hand local knowledge of fishermen, coastguards, life-boat officers and divers. There were several reasons why vessels were lost. Many ran aground or suffered collisions, but the large majority of shipwrecks in the immediate area of the UK coast were the result of military activities during the First and Second World War. In this regard, the book will hold significant historical interest for shipwreck enthusiasts and history buffs.

288 pages paperback
Published by Whittles Publishing (30 Nov 2008)
ISBN-10: 1904445748
ISBN-13: 978-1904445748

