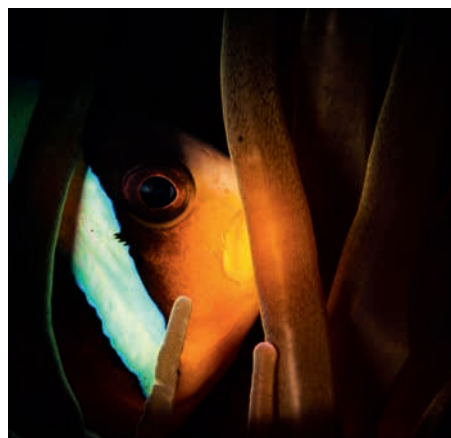
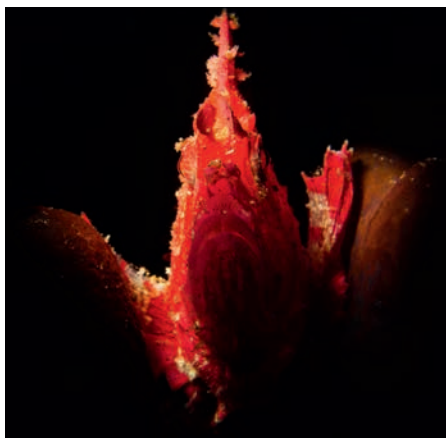
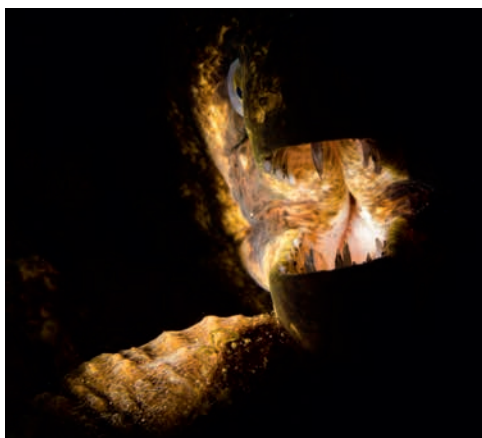




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SA's PREMIER DIVING MAGAZINE

## Sodwana Bay Festival PHOTO COMPETITION WINNERS



ISSN: 1819-7558



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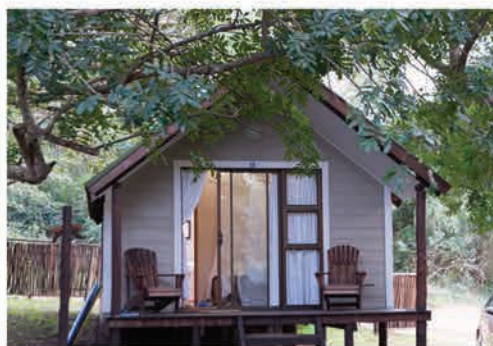
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# EAT SLEEP DIVE SUBMERGE

SA's PREMIER DIVING MAGAZINE

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EAT SLEEP DIVE  
**SUBMERGE**

SA's PREMIER DIVING MAGAZINE

**PHOTOSCAPE**

**12 Gallery**

**Sodwana Bay Festival**

Photography competition winners

**26 Feature**

**Sodwana Bay Festival**

The event

**48 Dream Destination**

**Island of fire**

Diving Indonesia's Coral Triangle

**64 Viewfinder**

**Jenny Stromvoll**

Beautiful pastels

**FEATURED IN THIS ISSUE**

**44 Feature**

**Behind the "Shark Guy"**

Andy Brandy Casagrande

**57 Feature**

**Diving, medical problems**

and acupuncture needles





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### **SUBMERGE Magazine**

*SUBMERGE* is a South African scuba diving magazine that sets forth to enhance the scuba diving community and the industries indirectly involved in the sport of scuba diving. The magazine's content is designed to be innovative and display interesting and "everyday" diving topics. It is a lifestyle magazine for divers to enjoy with family and friends. Whether it be image portfolios from the most esteemed underwater photographers, tips on dive safety, interesting industry news or just fun, light-hearted reading, *SUBMERGE* leaves its readers with the same good feeling that diving brings to their lives.



### **Scubatainment**

*SUBMERGE* is enhanced by its online sister magazine, *Scubatainment*, which was successfully launched in June 2012. This international online publication is a free scuba diving emagazine that offers readers something completely different.

From unlikely underwater creatures to bizarre diving destinations, *Scubatainment* promises to keep its readers in awe. The emagazine is now also living through *SUBMERGE* print magazine as a featured regular.



### **Alert Diver LITE**

The *Alert Diver* is a biannual digital magazine dedicated to dive medicine and written by DAN experts from all over the world. It provides insight into dive medicine, and the latest in DAN statistics, research, safety and training. It is a gateway to enriching your knowledge of dive safety. The magazine is available to DAN members. Its complementary counterpart, *Alert Diver LITE*, is included at the back of *SUBMERGE*.

## EDITOR'S NOTE



## Life is... a festival

The iSimangaliso Sodwana Bay Festival delivered a world-class photographic event that was bursting at the seams with global talent. The competition winners of each category are revealed in our Gallery on page 12 and for a low down on the Festival story, mosey on to page 26. Congratulations to all of the contestants and a big thank you to all festival-goers, sponsors and committee members for your tremendous support!

Another fantastic event was the HSASA 50 hour dive-a-thon that impressed me once again at their fourth annual fundraiser that took place in March. They raised the bar two-fold, setting new records in their quest to inspire and train a new class of divers.

As a first in the world, in the diving industry and as news, I am delighted to introduce you to diving medical acupuncturist, Janneke Vermeulen, a leading force in the prevention, diagnosis and treatment of ENT disorders. Find out more about her life's work and brand new book: *Diving Medical Acupuncture* on page 57.

On a final note, if you have yet to witness the marine spectacle that occurs in the waters of southern KwaZulu-Natal during the winter months, this is the time to head off and catch a glimpse of the Sardine Run. If you are bold enough to attempt one of the world's most challenging but rewarding scuba diving expeditions, send us those images you captured and a story of your experience of one of the most spectacular events the ocean has to offer.

Sabrina

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Image by Sabrina Hindley

# WHAT'S BUBBLING

DON'T MISS OUT on these morsels in SA scuba

### ON THE COVER

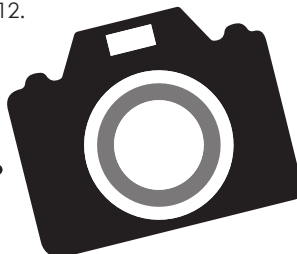
Veronique Pretorius and Eve Marshall enchant judges with their winning shots...



## Sodwana Bay Festival

### PHOTO COMPETITION WINNERS

We are proud to present the winners of this prestigious photography competition. Congratulations to all the photographers! Take a glimpse at these stunning images on page 12.



### DREAM DESTINATION

Imagine diving in Indonesia's Coral Triangle surrounded by magnificently beautiful coral and colourful sea life. Take a look on page 48.



### MEDICAL ACUPUNCTURE

Learn about medical acupuncture specifically for divers in this fascinating article by Janneke Vermeulen on page 57.

EAT SLEEP DIVE

# SUBMERGE

SA's PREMIER DIVING MAGAZINE

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# CURRENT AFFAIRS

## UNITED NATIONS OCEAN CONFERENCE

5 June 2018 marks the first day of the United Nations (UN) Ocean Conference, a major conference energising efforts to promote ocean sustainability. The Ocean Conference, the first UN conference of its kind, coincides with World Environment Day and World Oceans Day on Thursday, 8 June. The UN will not only serve as a place to raise awareness of the state of the ocean but call upon global leaders and advocates to generate new dialogues and partnerships aimed at implementing solutions.

## YOU ARE A WINNER!

Congratulations to our subscription-drive winner, Andrea Johnson who won a two-night stay in a beach chalet for two in Mozambique, COURTESY OF NUARRO LODGE



## SPONSOR A TORPEDO BUOY

Noordhoek ski-boat club unveils PE's first pink torpedo buoy. With your help, a Pink Torpedo Buoy can save a life. The NSRI has recently initiated an emergency floatation campaign using these brightly coloured rescue devices. They are being placed at unprotected beaches or high-risk areas along the coastline, especially where there are rip currents and no lifeguards on duty. These buoys are pink, unique to NSRI, easily identifiable and easy to spot in the surf by responding rescue resources. The cost of the Pink Torpedo Buoy with the sign is R2 000. To sponsor a buoy, follow this link or contact the NSRI at <https://sea-rescue-supporter.myshopify.com/collections/help-save-a-life>.

## LOCAL EVENTS

### WILDSIDE DIVE FESTIVAL

15–17 June 2018  
Noordhoek Ski boat Club, Marine Drive, Port Elizabeth



### FOOTPRINTS FESTIVAL

22–24 June 2018  
Morgans Bay, Eastern Cape



### PHOTO & FILM EXPO

26–29 July 2018  
Ticketpro Dome, Johannesburg



### KNYSNA OYSTER FESTIVAL

29 June–8 July 2018  
Knysna, Garden Route

## LONG BEACH SCUBA SHOW

Scuba Show at Long Beach Convention Center is one of America's largest consumer dive expos. Visitors can expect everything they ever wanted to know about scuba at this scuba diving trade fair. Scuba exhibitors and scuba diving retailers showcase the latest scuba gear as well as exotic and local dive destinations. Scuba Show also includes various seminars, film festivals and a casino party.

## SHARK CON

An event dedicated to raising awareness about shark and ocean conservation, Shark Con brings those who love the ocean together for a weekend of education and the fun of a Comic Con. The event will feature activities like a shark tool sand dig, Busch Gardens exhibit, ocean bounce house, GoDiveNow pool, shark slide, mermaids, shark specimens, marine rescue exhibit, more mobile exhibit, STEM projects and conservation organisation activities.



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## PHOTO & FILM EXPO

The Photo & Film Expo is celebrating its 10th annual event. As one of the most educational industry events in the world, which will once again bring you over 100 free workshops and seminars, an underwater photography showcase, a beauty and makeup area, studio set-ups and new features including: VR screenings, a macro shooting area, car displays, drone demos and plenty more.

## SARDINE RUN TIME

Each year in June or July along the KwaZulu-Natal coastline the word gets out and within hours, crowds of people converge in the area to join sharks, gamefish, marine mammals and birds in a feeding frenzy. It is a time of plenty for all as large shoals of sardines move in a band up the coast.



## INTERNATIONAL EVENTS

### UNITED NATIONS OCEAN CONFERENCE

5–9 June 2018  
New York, USA

### LONG BEACH SCUBA SHOW

22–24 June 2018  
Long Beach Convention Centre, California

### WORLD SURFSKI SERIES

26 June–2 July 2018  
Black River, Mauritius

### SHARK CON

14–15 July 2018  
Florida State Fair Grounds, Tampa

### THE GORGE PADDLING FESTIVAL

18–26 July 2018  
Hood River, Oregon

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# WINNER GALLERY

With brilliant entries into the 2018 photographic competition at the iSimangaliso Sodwana Bay Festival, we are thrilled to present our winners and finalists of each category.



PRESENTS

Sodwana Bay  
Festival

Powered by





*Overall winner*

**Veronique Pretorius**

Prize: 7 nights, 5 dives for two people, including flights to Madagascar.

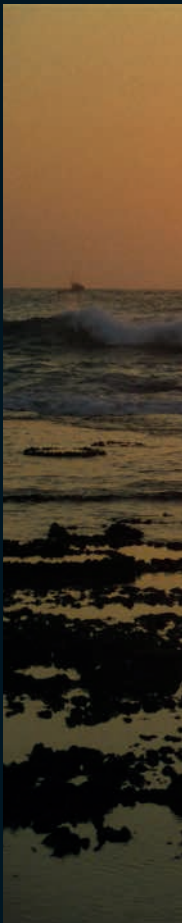
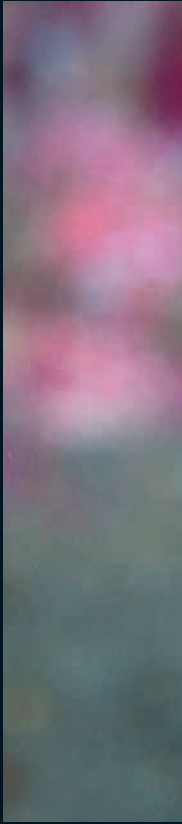
*Sponsored by Sakatia Lodge and Airlink.*

*Experienced category:  
Marine life behaviour  
or creative winner*

**Eve Marshall**

Prize: Scubapro Mk11/C350 first and second stage.

*Sponsored by Scubapro.*







*Vivid-Pix category:  
Winner*

**Chris Pienaar**

Prize: Full software licence.

*Sponsored by Vivid-Pix.*

*Novice category:  
Topside runner-up*

**Erika du Plessis**

Prize: Fin Xtream and Xvision mask.

*Sponsored by Aqua Divers International.*





*Experienced category:  
Topside winner*

**Matt Pretorius**

Prize: 7 day stay in 8 sleeper  
chalet plus 1 annual DAN master  
membership.

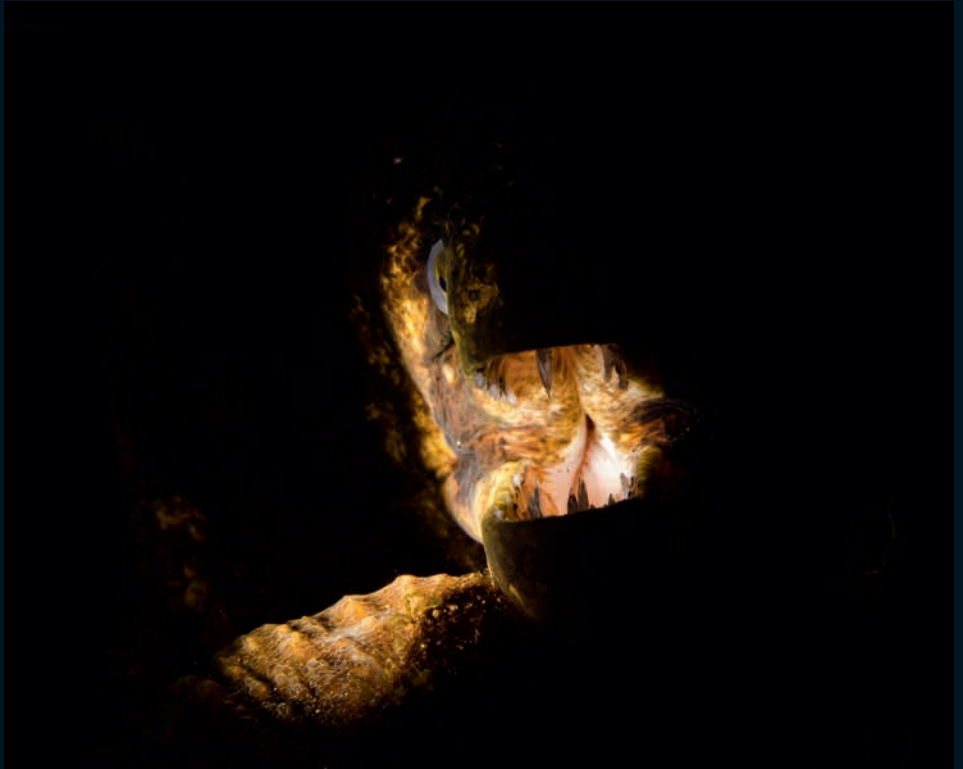
*Sponsored by Paindane Beach Resort  
and DAN SA.*



*Experienced category:  
Macro winner*

**Chris Pienaar**

Prize: Olympus camera and  
Nauticam housing.  
*Sponsored by Nauticam.*





*Experienced category:  
Macro runner-up*

**Eve Marshall**

Prize: Mares Smart Dive computer.

*Sponsored by Aqua Divers  
International.*

*Novice category:  
Marine life behaviour  
or creative winner*

**Elaine de Gersigny**

Prize: 2 nights for 2 people plus  
1 annual DAN membership.

*Sponsored by Nautilus Lodge  
and DAN SA.*

*Novice category:  
Marine life behaviour  
or creative runner-up*

**Werner Croucamp**

Prize: 1 annual master DAN membership.

*Sponsored by DAN SA.*



*Novice category:  
Topside winner*

**Naomi Steyn**

Prize: Turtle tour for 4 people.  
*Sponsored by Ufundu Turtle Tours.*



*Experienced category:  
Topside runner-up*

**Antonio Martins**

Prize: Seawing Nova fins, Synergy mask and Escape snorkel.

Sponsored by Scubapro.

*Novice category:  
Macro winner*

**Elaine de Gersigny**

Prize: Aqua Lung i200 dive computer.

Sponsored by Manex Power and Marine.





*Novice category:  
Wide angle winner*

**Tanya van der Walt**

Prize: Paralenx action camera.

*Sponsored by Paralenx.*



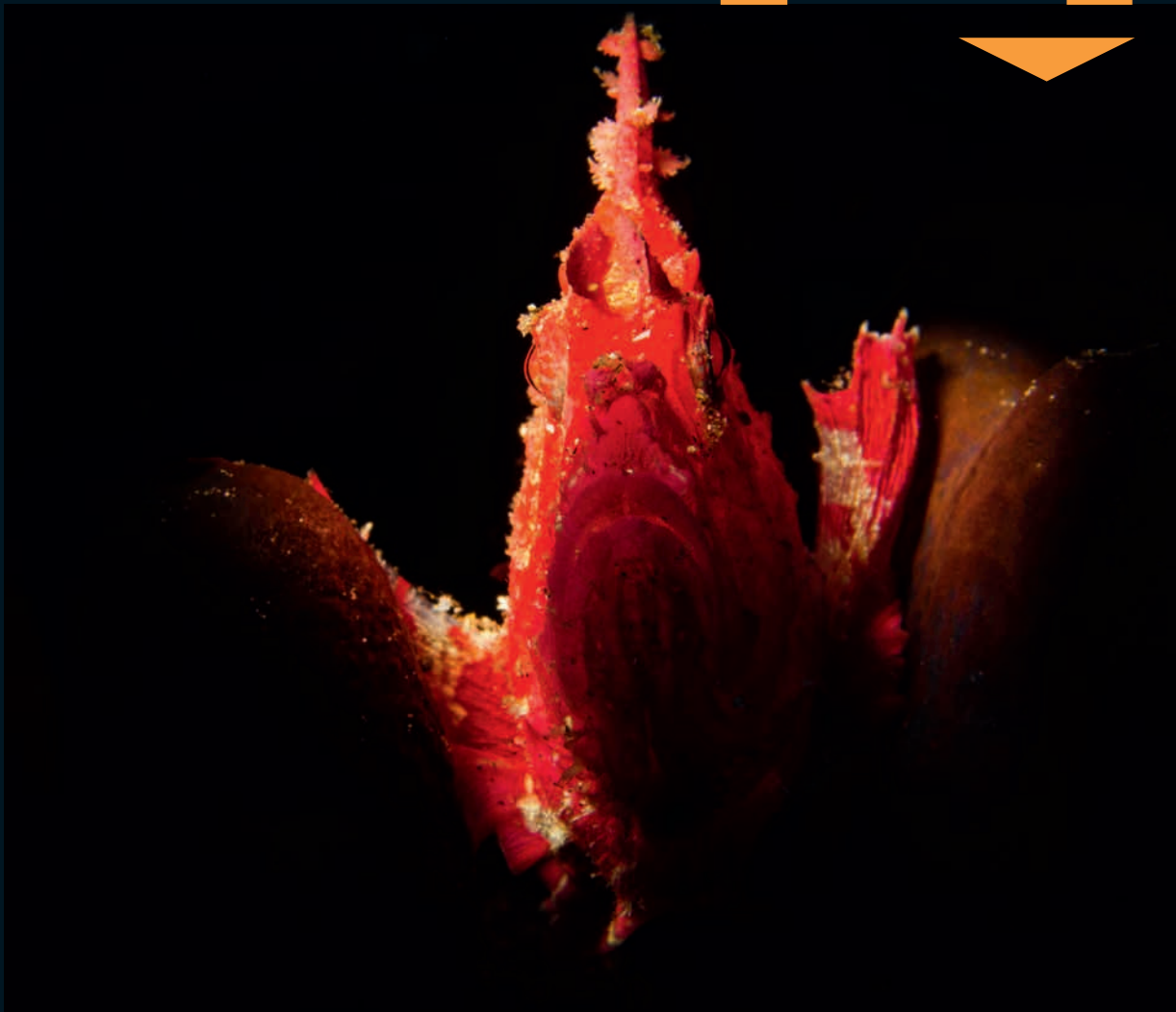


*Experienced category:  
Marine life behaviour  
or creative runner-up*

**Eve Marshall**

Prize: 1 annual DAN master membership.

*Sponsored by DAN SA.*





*Novice category:  
Macro  
runner-up*

**Pedro Ferreira**

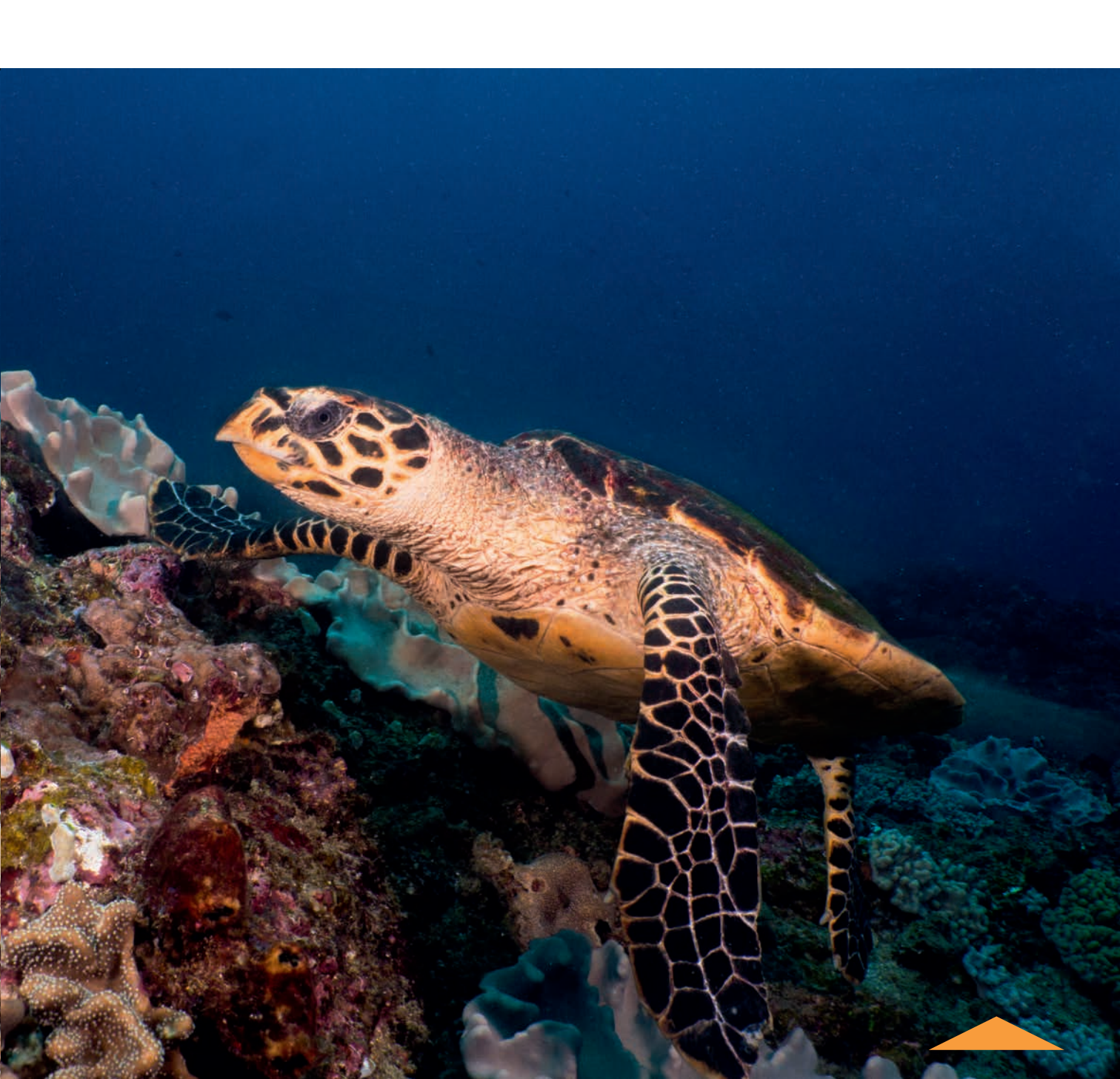
Prize: 1 annual master DAN membership.

*Sponsored by DAN SA.*



*Novice category:  
Wide angle highly  
commended*

**Pedro Ferreira**



*Novice category:  
Wide angle  
runner-up*

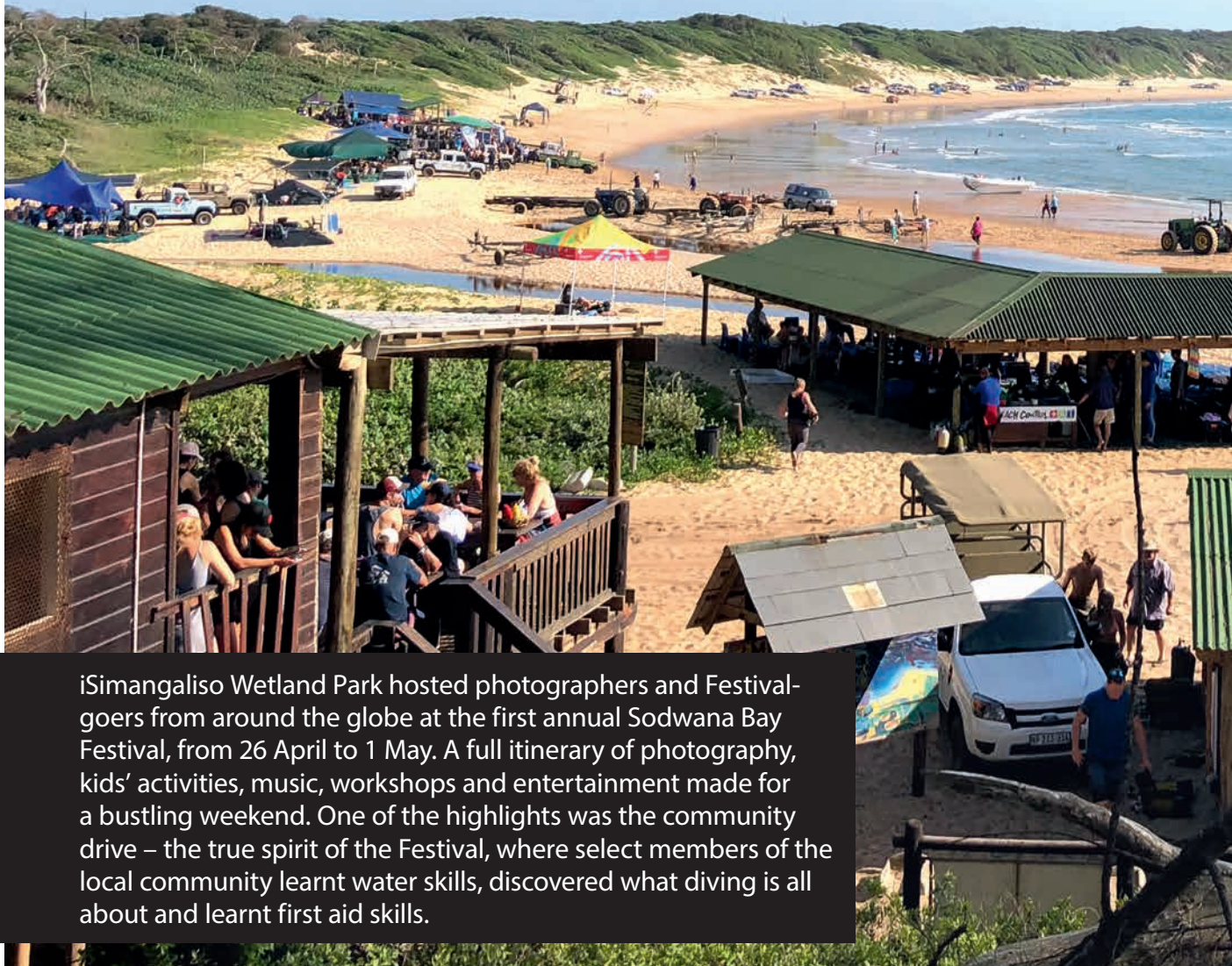
**Pedro Ferreira**

Prize: 5 nights accommodation for  
6 people.

*Sponsored by Zavora Lodge.*

# iSIMANGALISO SODWANA BAY FESTIVAL 2018

By the *SUBMERGE* Team



iSimangaliso Wetland Park hosted photographers and Festival-goers from around the globe at the first annual Sodwana Bay Festival, from 26 April to 1 May. A full itinerary of photography, kids' activities, music, workshops and entertainment made for a bustling weekend. One of the highlights was the community drive – the true spirit of the Festival, where select members of the local community learnt water skills, discovered what diving is all about and learnt first aid skills.



Simangaliso  
Wetland Park

PRESENTS

# Godwana Bay Festival

Image by Ian Kriel

**W**ith a strong focus on conservation and sharing the beauty of the Park, the iSimangaliso Sodwana Bay Festival was a wonderful opportunity for photographers to hone their skills in workshops, explore the beauty of Sodwana Bay and share their passion with others. We were thrilled with the variety and quality of the 81 entries received as the photographers captured landscapes and underwater images showcasing iSimangaliso's natural splendour. A highlight of the Festival was a community drive that saw locals introduced to water and first aid skills, and scuba diving.

Registration took place at the Festival grounds on Thursday, 26 April, as travellers trickled into the Park and excitement mounted as the Festival vibe started to sweep through the Park. Children registered for Kids' Club activities, and their parents for Festival passes and entry into the photographic competition. Our registration crew tirelessly managed ticket sales and enquiries from

Beach Camp, where divers were welcomed with a coffee before and after their dives. Photographic contestants also received a nifty bracelet with all their information synced and instructions on how to download the VIVID-PIX software for their exciting new category.

The welcoming ceremony was a jovial affair, with dive operators, divers and Festival-goers getting into the groove with Sondela Dune Tunes. Sabrina Hindley (*SUBMERGE* Magazine) then took to the stage to introduce the crew, who gave us their best performances in a rockin' and hilarious dance-off competition. Kudos to one of our medic crew, Ian Kriel, for completely stealing the show!

Every night of the Festival offered a different vibe. The first and last evenings were crowd-pleasers with a busy venue and local band, Sondela Dune Tunes setting the atmosphere. The second evening was the "Captain's Quiz" evening, which prompted some very cheeky answers and was enjoyed by all. "The Wetness Unplugged"

## Photographic competition facts

### HOW IT ALL CAME TO BE

After an unfortunate announcement that the annual Sodwana Shootout would be negated in 2017, a small group of committed people from *SUBMERGE* Magazine, iSimangaliso and Nauticam dedicated time and resources to reinvent this popular annual photographic competition. Now, the iSimangaliso Sodwana Bay Festival as an all-inclusive Festival and world-class photography competition for the benefit of the Sodwana Bay community. iSimangaliso Wetland Park once again presented the perfect stage for learning, developing and innovating. "iSimangaliso" translates into miracle and wonder, and it certainly lives up to its name.

### WHAT IS IT ABOUT?

With the aim of being both the diving Festival of the year and a firm highlight on the iSimangaliso conservation calendar, the photographic competition aims to reflect the beauty and biodiversity of South Africa's first UNESCO World Heritage Site. It is a celebration of South Africa's unique offering.

### WHO WAS THERE?

Renowned South African underwater photographers, Fiona Ayerst and Allen Walker presented workshops and were judges. Dive industry suppliers and schools took part and supported either by volunteering their time and/or sponsoring excellent prizes. Divers from all over South Africa and the world competed in the competition.

### WHERE DID IT TAKE PLACE?

Sodwana Bay, in the iSimangaliso Wetland Park, offers plenty of scope for underwater and land-based photography. Home to myriad species of marine life and teeming with unmatched scenic beauty, Sodwana Bay provides a sense of place, exceptional biodiversity, continuous ecological developments and diverse eco-systems.

In order to accommodate photographers, the Festival was ever-present, taking place from Beach Camp in the mornings and campsite C50 (the Festival Zone) in the afternoons. Workshops took place from the Sodwana Bay Conference Centre and the Sharklife Museum.



# Community drive

## SWIMMING AND WATER SKILLS

Colleen Barnard of Amanzi Scuba and Swim Centre headed the afternoon water safety workshop with attendance of learners from Moses Zikhali High School, Mpiyakhe High School and Nhlambanyathi High School amongst others. The group of 36 participants, aged between 15 and 40, were transported to the Sodwana Bay Lodge swimming pool in iSimangaliso's branded bus by driver, Comfort Madondo. Sporting new swimming costumes, caps and goggles, sponsored by HEAD swimming and Aqua Divers International, the new swimmers learned skills for

accidental submersion, assisting another swimmer and snorkelling, with the aim of understanding the ocean and encouraging youths to enter a career in diving.

## DISCOVER SCUBA DIVING EXPERIENCE

Ten lucky swimmers were selected by Colleen for the opportunity to participate in a discover scuba diving course commencing with a pool session in the Sodwana Bay Lodge swimming pool including an exhilarating boat trip and first dive in the ocean. PADI Regional Manager, Anders Heegaard,

and two assistant instructors taught the participants how to use scuba equipment in shallow water. They gave a quick and easy introduction to what it takes to explore the underwater world before they were exposed to an underwater experience.

## EMERGENCY FIRST AID RESPONSE

Quintin de Boer led the EFR (Emergency First Response) session where he taught first aid and life skills to a group of interested local participants.



Image by Janet Middleton.



Image supplied by iSimangaliso.

## SUPPORTING COMMUNITY ENTREPRENEURS

Festival catering was sourced from community entrepreneurs and included Jeffrey Zikhali renowned for his donut delivery to hungry divers and Thandazile Mathenjwa of Sikhukhukhu Catering who fed the EFR course participants, both were supported by the iSimangaliso Rural Enterprise Programme.



Image by Janet Middleton.

"Prisca's Kitchen" provided scrumptious street food that included favourites such as fish 'n chips, pulled pork pita and pineapple on a stick, to mention a few. In order to support and uplift local entrepreneurs, David Barnes from Coral Divers mentored Prisca and her team ensuring a top-class food offering.



Image supplied by iSimangaliso.



(also known as Scubapro's Steve Rusznyak and NAUI's Hanalie Burger) and duo band DNA put on a fantastic show. Disaster struck on the third evening when the 80s party was scheduled to take place: the power went out in Sodwana Bay, and our 80s neon lights blinked out. But musical duo DNA saved the evening with a campfire acoustic session that reminded us of why we love music Festivals! Mozambican muso, Pedro Barbosa arrived on the penultimate day of the Festival with his combination of good humour and laid-back rock, to the enjoyment of everyone there. The party really got started on the final evening, when Pedro Barbosa grabbed his guitar and joined Sondela Dune Tunes for a jam session that had the whole venue on the dance floor. After the tension and celebration of the awards ceremony, Festival-goers were ready to get down and boogy, and they certainly did.

An array of workshops presented by some of the most respected names in the photography and diving industries in South Africa were conducted at Sodwana Bay Lodge and the Sharklife Museum. Contest judge, Allen Walker, presented workshops on pushing limits in underwater photography and using the energy elements to think outside the box, while judge Fiona Ayerst delved into an approach to camera setup, in-water photo session and lessons in composition. Author Dennis King gave a talk on his lifelong passion for the ocean, Neville Ayliffe on the gems of the Indian Ocean and, turtle man, Peter Jacobs entertained us with his "five facts that you wouldn't believe about turtles" talk. Janet Middleton presented a social media workshop with focus on small businesses' approach to tapping into digital audiences and best practice. All the workshops offered photographers, ocean-lovers and even small business owners a chance to ask questions, practice skills and improve their knowledge.

## ABOUT THE JUDGES

Fiona Ayerst is a professional stills underwater photographer. She is also a writer, public speaker, and a passionate conservationist who speaks up for animal rights.



Allen Walker ensures that conservation issues close to his heart are supported in the best way possible. He specialises in underwater, wildlife, sport and landscape photography.



Image by Peter Middleton

**YouTube**

Watch the Community Drive highlights reel on our YouTube channel, [https://youtube/\\_KIOcJIXoS8](https://youtube/_KIOcJIXoS8) SUBMERGE Magazine.

# Photo competition prize winners

## NOVICE MACRO RUNNER-UP

Pedro Ferreira

PRIZE: DAN Annual Master Membership

 Sponsored by DAN Southern Africa

## NOVICE MACRO WINNER

Elaine de Gersigny


PRIZE: Aqua Lung 1200 Dive Computer

 Sponsored by Manex Power and Marine

## NOVICE WIDE ANGLE RUNNER-UP

Pedro Ferreira

PRIZE: 5 night accommodation for 6 people

 Sponsored by Závora Lodge Mozambique and Závora Divers

## NOVICE WIDE ANGLE WINNER

Tanya van der Walt

PRIZE: Paralenz Action Camera

 Sponsored by Paralenz

## NOVICE TOPSIDE RUNNER-UP

Erika du Plessis


PRIZE: Mares Fin Xtream and Mares Mask Xvision

 Sponsored by Aqua Divers International

## NOVICE TOPSIDE WINNER

Naomi Steyn

PRIZE: Turtle Tour for 4 people

 Sponsored by Ufudu Turtle Tours Sodwana Bay

## NOVICE MARINE LIFE BEHAVIOUR OR CREATIVE RUNNER UP

Werner Croucamp


PRIZE: DAN Annual Master Membership

 Sponsored by DAN Southern Africa

## NOVICE MARINE LIFE BEHAVIOUR OR CREATIVE

Elaine de Gersigny

PRIZE: 2 nights for 2 people

 Sponsored by Nautilus Lodge - Sodwana Bay

 and a DAN Annual Master Membership sponsored by DAN Southern Africa

## EXPERIENCED MACRO RUNNER-UP

Eve Marshall


PRIZE: Mares Smart Dive Computer

 Sponsored by Aqua Divers International

## EXPERIENCED MACRO WINNER

Chris Pienaar

PRIZE: Olympus camera, Nauticam housing

 Sponsored by Nauticam and Dive Action Cape Town

## EXPERIENCED TOPSIDE RUNNER-UP

Antonio Martins


PRIZE: Scubapro Seawing Nova Set

 Sponsored by Scubapro South Africa

## EXPERIENCED TOPSIDE WINNER

Matt Pretorius

PRIZE: 7 day stay in 8 sleeper chalet

 Sponsored by Paindane Beach Resort / Paindane Strand Oord Mozambique and DAN Annual Master Membership Sponsored by DAN Southern Africa

## EXPERIENCED MACRO WINNER

Eve Marshall


PRIZE: DAN Annual Master Membership

 Sponsored by DAN Southern Africa

## EXPERIENCED MACRO WINNER

Eve Marshall

PRIZE: Scubapro Mk11/C350 Regulator

 Sponsored by Scubapro South Africa

## VIVID-PIX WINNER

Chris Pienaar

PRIZE: Vivid-Pix Full Software Licence

 Sponsored by Vivid-Pix

## OVERALL WINNER

Veronique Pretorius

PRIZE: 7 night, 5 dives for 2 including flights

 to Madagascar

Sponsored by Sakatia Lodge, Madagascar & Airlink



Image by Lindy Duffield.

The very successful and sought-after Kids' Club offered parents the perfect opportunity for kids to have a place of entertainment when it was time to dive and focus on photography. Kids had loads of beach fun, marine education and full-blown entertainment. With a comprehensive programme, parents were children-free between 7am and 3pm. The low tide provided a perfect environment for beach activities including a Rocky Shores Exploration, where the kids could find explore rock pools, learn about the turtles of Sodwana Bay, build sand sculptures and even attend a beach clean-up. Children were then transported to the Festival Zone for lunch and a rest before heading to the Sharklife Museum for movies and time spent discovering more about sharks and other marine critters.

The cornerstone of the Festival, the photographic competition, was very well supported, with a total of 81 entries received across the various categories. The aim of the contest was to encourage all photographers and divers to submit their favourite shots, regardless of whether

they were using a DSLR, compact camera, action camera or cellphone – to capture, innovate and share their Sodwana Bay moments, both above and below the waves.

After three intensive days' shooting, and some photographers taking lessons learnt from the workshops and retrying to capture that "Wow" shot, photo entries were received at the Festival Zone on Sunday evening, 29 April. Sabrina Hindley hosted the entry submissions, engaging with the somewhat nervous and proud contestants, ensuring that files were correctly named and photos were aligned with the rules.

We were lucky to have extraordinarily talented experts in the field, Fiona Ayerst and Allen Walker, who judged the entries to determine our well-deserved winners. The judging took a gruelling eight hours where each image was rated in terms of technical aspects and creativity.

The grand finale on the final evening of the Festival saw the Awards Ceremony. The air was filled with nervous excitement as the evening got

For the highlights of the photographic competition, turn to our Gallery on page 12.



**YouTube**

See our event highlights playlist on our YouTube channel: <https://www.youtube.com/playlist?list=PLzzX3IIEPNjK0WhBt7OU4-JnKDrYd4UAiSUBMERGE> Magazine.



## Feedback from photographers/sponsors/festival-goers

"There are not enough words to explain how much we enjoyed and appreciate the Sodwana Festival weekend. I don't think I have ever in my 61 years met and listened to so many INSPIRING, enthusiastic and very knowledgeable speakers in one weekend! Every single workshop was awesome. I would not have been close to winning the prize without those workshops."

*Tanya van der Walt*

"Thank you for welcoming greenhorns like ourselves into the competition in your special diving home, and for the Festival where we had such a good time. Thank you too, for the good time that we'll have again when enjoying the prize I won at Sodwana Bay Lodge."

*Poppet Nel AKA the fall guy*

under way. The crowd was entertained by MC Pedro Barbosa, but all eyes were on the prizes, as Sabrina Hindley, Lindy Duffield (iSimangaliso) and Barry Bey-Leveld (Nauticam) took the stage to announce the winners. Ahead of this exciting moment the audience were captivated by the screening of the documentary through NEWF (Nature, Environment, Wildlife Filmmakers) and Jackson Hole WILD Community cinema, A Plastic Ocean, heralded by Sir David Attenborough as the most important film of our time, highlighting the plight of our ocean and marine wildlife that is being systematically destroyed by plastic waste in their delicate environment.

All-in-all, the Festival was a success. With only the beginnings in 2018, we hope to see you all in 2019.

A big thank you to the sponsors and crew who helped in making the Festival a huge success from conception to completion. Without our sponsors, none of this would be possible. **SM**



Image by Ian Krill



Image by Jane Wildlecon



# FULL FACE MASK

## An innovative mask for clearer vision

The new Sea Vision Full Face Snorkelling Mask is designed to make breathing through your mouth or nose more comfortable while you are snorkelling. Better yet is the GoPro mount that makes it easier to capture those amazing new perspectives. Whether you are a first-timer or seasoned snorkeller, using a full face mask is an option you should seriously consider.



**D**esigned for both adults and kids alike, this silicone mask provides a snug, comfortable fit and is easily adjustable with wide straps that make it almost impossible to get hair tangled in, unlike traditional snorkel masks. With the new technology of drain valves which mostly prevents water from getting in, this mask comes with an innovative design that features a separate breathing chamber that creates airflow away from the lens. It eliminates fogging and as a result makes your experience much more enjoyable.

Beginners can really benefit from using the full face mask. There is no learning curve or hassle over comfortability. You simply put it on and breathe normally. Even if you are not a

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THIS NEW FULL FACE SNORKELLING MASK WITH A GOPRO ADAPTOR ALLOWS YOU TO BREATHE JUST AS EASILY AND NATURALLY IN THE WATER AS YOU WOULD AT THE SURFACE.

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beginner, this mask is great if you have issues with sore jaws or mouth from holding onto the snorkel.

There has been some controversy with people suggesting that the mask cycles CO<sub>2</sub> when in actual fact the good masks

do not. They are of high quality and do not recycle old air. You do, however, need to be careful of the cheap knock-offs, much like everything else. The only restriction is that the mask is not suitable for free diving or intensive swimming.

The main reason why people do not enjoy snorkelling is the difficulty of breathing underwater through the snorkel. Breathing through the mouth feels unnatural, and the snorkel mouthpiece can be intrusive, uncomfortable and unhygienic. This new full face snorkelling mask with a GoPro adaptor allows you to breathe just as easily and naturally in the water as you would at the surface. Once you use it you will realise how much better snorkelling can be. It is a great alternative for three reasons: Visibility, natural breathing and drain valves.

- **Visibility:** The 180° panoramic view provides perfect visibility. The frame seals behind your vision line which means you do not have a frame that alters your view. Fogging is totally eliminated thanks to a double air flow. Furthermore, the snorkel is highly visible to avoid any collisions on the surface.
- **Natural Breathing:** While using a full face mask you can inhale and exhale through either your nose or mouth. The natural breathing helps keep you calmer and more relaxed in the water. The absence of a mouth piece also makes extended snorkelling more comfortable, allowing you to snorkel longer.
- **Drain Valves:** The mask covers your entire face, which decreases the chance of water getting into the mask when you smile. The rear strap holds the mask in place on your head, allowing you to move freely without losing the mask. To prevent water from entering the snorkel, the mask is equipped with a mechanism that seals the top of the snorkel when submerged.

The GoPro mount can be used to attach all types of waterproof cameras. It is the essential accessory for anyone wishing to share their

underwater experiences. It comes in four colours (black, blue/white, pink/white and turquoise) and sizes to fit both adults and children.

Snorkelling has never been more easy thanks to the full face mask. No more difficulty breathing, narrow vision or fogging, only long lasting and more enjoyable swimming. So what are you waiting for? The underwater wonders await you.

Order yours online today at [www.scuba.co.za](http://www.scuba.co.za) and have a good snorkelling trip! **SM**

## HAVE YOU DECIDED ON A FULL FACE MASK?

Discover some tips for optimal use and to secure safety on your next excursion.

### Usage tips

- The Sea Vision has been designed for adults and children over 10 years old
- Choose the right size to ensure that the mask is watertight
- Opt for a low intensity snorkelling trip to avoid excessive breathing effort
- Do not free dive as the Sea Vision mask is only designed for the surface

### Choosing the right size

So you have decided to go for a sea vision mask? To make the most of your mask, it is essential to choose the right size for your face size. A Sea View mask that is too small will not offer optimal comfort, too big and you could end up with uncomfortable leakage. The Sea View mask comes in two sizes that cover 90% of faces for men, women and children over 10 years of age:

- Size S/M for adults with thin faces, women, and children over 10 years old
- Size L/XL is the average size for an adult male

The best idea is to try both sizes in store. Once the mask is tight on your face, if there is no space between your chin and the bottom of the mask, you have got the right size.

# THE BOUNDARIES BETWEEN RECREATIONAL AND TECHNICAL DIVING



**NUNO GOMES**

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A DIVER EMBARKING ON A TECHNICAL DIVING CAREER SHOULD HAVE ENOUGH EXPERIENCE.

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**M**any divers are not interested in becoming technical divers. It can be a lot of fun diving shallower than 30m and using a single cylinder. It is simple, one can see a lot of marine life and it is relatively inexpensive. Divers can do quite a few dives, per day, using multiple single cylinders. There is no need to buy or rent very expensive dive equipment and it does not require any further training.

Some divers will ask: "What is there to see deeper than 30m in the sea, is

dark and gloomy?" It is even darker if one penetrates a wreck or explores a cave without a powerful dive light and one can also get lost.

Generally one needs double cylinders or a rebreather to do technical diving. Besides the equipment, the gases will also be different. Air or nitrox alone will generally not be enough. Divers might use trimix (a blend of oxygen, nitrogen and helium) and may also use pure oxygen.

Is it worthwhile doing the technical diving training? Well it might be, if

you want to explore further. There is certainly quite a lot to see down deep but only very few will get the chance to see it. For most divers the transition from recreational to technical diving is a question of economics: Does my bank balance allow me? Some are lucky enough not to have that problem. The bottom line is that technical diving is expensive, even recreational diving is fairly expensive.

If we set economics aside then it is a question of commitment and experience. I would say that a diver embarking on a technical diving career should have enough experience in night diving, low visibility diving, boat diving, sea diving, diving in quarries/sinkholes and plenty of 30m dives. It would be a good idea to be a nitrox diver. A rescue diver's course and an oxygen administrator's certificate would also be very useful.



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THE FUNDAMENTAL ASPECT  
BETWEEN RECREATIONAL  
AND TECHNICAL DIVING IS  
BUOYANCY SKILL LEVEL.

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## BARRY COLEMAN

**T**he boundaries between technical and recreation diving are debatable as our understanding of science and dive training develop. The accepted definition is any diving beyond the recreational limits is technical diving. This would include diving beyond the no decompression limits or in an overhead environment, however, should it also include a higher buoyancy skill level?

The fundamental aspect between recreational and technical is your buoyancy skill level. It could be argued that recreational diver training should be adapting to provide the basic skill level that an entry technical diver will need to have. In the past, buoyancy control skills of a recreational diver were poor that there was a considerable boundary between the technical and recreational diver. Unfortunately, this large divide

made the transition from recreational to technical very difficult.

Today, there is still training that perpetuates this divide for the unwitting person. Perhaps the most alarming aspect is that after their training, they walk away with an instilled false impression of their abilities to swell the gap. It is not all bad as motivated training agencies are now concentrating on improved skill levels with longer in-water training requirements to improve diver safety and reduce the boundaries.

To be able to do this, recreational instructors require the necessary skill and agency support to pass along their knowledge. This is a daunting task

as many recreational instructors may not have undergone the higher skill development. The saying "cannot teach an old dog new tricks" makes it difficult for the ego to learn "new tricks", but for those who are willing to do so, the reward will be a more confident and safer instructor.

Some never want to become a technical diver, however, the valuable lessons learnt in technical diving when applied to recreational diving will ensure a far safer and confident diver. Just like Formula One racing, technology is used in our everyday vehicles, making them safer. There are boundaries but there is an important link. **SM**



### 1 ROGUE BC AQUA LUNG ROGUE BC

Created for the accomplished diver who knows exactly what gear they want, the Rogue BC strikes the perfect combination of personalisation and minimal design. Utilising Aqua Lung's ModLock connectors, the Rogue allows divers to dive their way thanks to the Rogue's easily interchangeable size and accessory configurations.



### 2 BIGBLUE DIVE LIGHTS VL4000P

The 10th Anniversary Edition 4000 lumen video light is still a great choice for any diver taking video whether it be Go Pro® or a higher light performance requirement. It is a self-contained, compact yet powerful, dive light - but best suited for video purposes with a 120° beam angle.

# DIVE INTO THESE DEALS



### 3 F1 PLUS ALPHA ULTRA DRY COMBO

These frameless masks are loved by many divers for their low-profile and ability to fold flat for easy carrying. The silicone skirt bonds directly to the lens for lower weight and reduced drag, and is made with supple, high-grade silicone that seals gently and securely against the face. The Alpha Ultra Dry snorkel allows users to take every breath with confidence and focus on the reef below. It features a float mechanism which closes instantly to prevent water from entering the snorkel, whether accidentally or purposely submerged. Equipped with a flexible lower bore which reduces jaw fatigue, a mouthpiece that drops away when not in use and a high-quality silicone mouthpiece that is comfortable and durable, this streamlined design reduces drag while swimming and is great for scuba divers. Available in black and white!



4  
R9 325



4  
R10 660

#### 4 SCUBAPRO C370 SECOND STAGE

Simple and reliable, the new air balanced C370 regulator delivers consistent airflow, ease of use and dependability. The newest addition to SCUBAPRO's family of regulators, the C370 brings forth the best features of its C350 predecessor, while adding a balanced valve to its design. Compact and lightweight, the reg features an improved work of breathing, a brand new exhaust tee and a compact hi-flow mouthpiece. Paired with either the Mk11 or Mk17 Evo first stages, you'll be sure to get a user-friendly, compact, smart and affordable air delivery system.



6  
R12 249

#### 5 GARMIN DESCENT™ Mk1

Introducing the Descent™ Mk1, a dive computer housed in a watch-style design offering surface GPS navigation with rich colour mapping. Designed for recreational, technical and free divers, the Descent Mk1 allows divers to plan their underwater adventure right on the watch and use GPS waypoints to automatically mark dive entry and exit points. The Descent Mk1 also offers multiple dive modes, 3-axis compass, in-dive data, as well as multi-sport functions like wrist-based heart rate, activity profiles and automatic dive log uploads via the Garmin Connect Mobile app to Garmin's online dive community.



5  
R16 999

#### 6 RED DEVIL SINGLE BACKMOUNT SET

This complete tech/rec set fits all and is everything you need to take on your first step towards the world of XR. Moving away from traditional XR colours with details in striking "red devil", this back-mount is a complete set, light and perfect for travelling, and has a great look that matches other new products. It is easier for beginners and non-technical divers as it is already mounted, and consists of a 16l red single tank donut, 3mm red aluminium back-plate, 6mm red aluminium rings, red aluminium buckle, standard webbing harness, 2 tank straps with red aluminium buckles and black flat head bolt screws.

# HSASA 50HR DIVE-A-THON 2018

By the SUBMERGE Team

The Handicapped Scuba Association of South Africa (HSASA) dedicated another weekend to enriching the lives of disabled people around the country through scuba diving. SUBMERGE supported their efforts in March and we were once again impressed at the tireless dedication of all those involved.

The HSASA Dive-A-Thon 2018 broke new records this year in their fourth annual fundraising event hosted at Miracle Waters near Brits from 9-11 March. The dive marathon raises funds to enable disabled divers to do scuba diving courses and attend diving excursions so that they too can share in the experience of diving. The Dive-A-Thon blew our breaths away, raising the bar two-fold, making it even bigger and better than last year.

The HSASA is an established non-profit organisation that operates independently from any dive school. Their aim is to help improve the physical and mental well-being of people living with disabilities through the recreational sport of scuba diving. Scuba diving is seen to have rehabilitative effects, helping to restore self-esteem and creating the opportunity for divers to feel unrestricted in a gravity-free environment. Besides the new skill developed, the HSASA is a friendly community providing endless possibilities of new friendships and a more adventurous life.

The diving took place in relay style and commenced on Friday, 9 March at 9am where there were at least two people in the water for the duration of the dive-a-thon, as well as a Rescue diver who ensured the safety of everyone until the last dive on Sunday, 11 March at 1pm.

Divers contributed R150 to book their one hour dive slots, a small contribution to

the considerable impact it has on the lives of people with disabilities. The number of divers almost doubled since last year, far exceeding the anticipated goal, with an exceptional 780 sponsored dive slots.

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**HSASA'S AIM IS TO HELP IMPROVE THE PHYSICAL AND MENTAL WELL-BEING OF PEOPLE LIVING WITH DISABILITIES THROUGH THE RECREATIONAL SPORT OF SCUBA DIVING.**

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The weather could not have been more perfect for DSDs and outdoor activities. The HSASA team made sure there was plenty family entertainment with jumping castles for the kids, a braai competition and a compass challenge, treasure hunts, a boma fire at night and of course plenty of scuba diving. With many stores to explore, lucky draws and prizes to be won including holiday getaways to Egypt, Inhambane, Ponta do Oura, Sodwana and the South Coast, there was something for everyone at this year's Dive-A-Thon.

The crowd was awesome but there were a few who stood out from the rest and certainly made an impression – one who completed his 200th dive and another who dived in her wedding dress. A special guest, known as “the funny green

## DRUM ROLL PLEASE

### Dive-A-Thon stats

- Over 802 dive slots were sold, breaking the 2017 record
- 18 dive schools were represented
- 170 divers took part, with qualifications ranging from junior open water up to Instructor level
- 8 different dive associations were represented: PADI, NAUI, SSI, RAID, IANTD, CMAS, HSA and TDI

### Event Winners

- 7th Heaven Scuba won the “Battle of the Dive Schools” with 166 dive slots and Adventure Mania was close on their heels.

man” ensured that everyone was always in high spirits and each person jumped in to help where they could. Even the little helpers (Dive-A-Thon children) were eager to help without being asked.

It was remarkable to see the diving community joining hands and making it possible for differently abled people to also share in the excitement and freedom that comes through scuba diving. Participants came from far and wide (from Cape to Cairo) to support the event. Representations from the Free State, Gauteng, KwaZulu-Natal, Mpumalanga, North West, Red Sea and the Western Cape were all in attendance with a total of 17 dive schools and associations such as DAN-SA, PADI, NAUI, IAN-TD, HSA, RAID, CMAS and TDI showing their full support. The representatives of DAN-SA made it their mission to keep divers hydrated and ensure diver safety throughout the event.

The event took eight months of planning with the help of the management team, Melissa Leonard and Leon Swart, who arrived at the venue a few

days earlier to start the preparations for the 2018 dive-a-thon. They went out of their way to make this the success that it was, even going so far as hiring Raphael, SA's Cakeboss who had the crowd in awe at the mere sight of the ocean-inspired sugary treat.

An important goal of the weekend was the training of specialised buddies for disabled divers. The reason they are trained is to understand what it is like for disabled divers and to know what their particular inability is like underwater; it is a big responsibility. We found this commitment truly moving and applaud those divers who choose to undergo this specialised training.

We look forward to the next HSASA Dive-A-Thon and are excited to see what next year holds. Melissa Leonard, Director of HSASA concluded: “To all the ladies and gents who were our hands and feet on this magical weekend – you rock and we will never forget what you did for us. Without you, we would not have been able to do this. Words are not enough to express our heartfelt gratitude!” **SM**



## EVENT SPONSORS

7th Heaven  
Adventure  
Africucut  
Agulhas House  
and Dive Centre in  
Umkomaas  
Aqua Planet and  
Dive Centre  
Aqua Wild Africa  
Aqualung  
Ashley Beggs  
Back2Basics  
Adventures  
Bidvest McCarthy  
Ford The Glen  
CMAS  
Coral Divers  
DAN-SA  
Divetek  
DuneSeven  
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and  
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Plastics SA  
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Reef Divers  
Scuba Adventures  
– Ponta Beach  
Camps  
Moz.Dot.Travel  
Scuba Crew  
Scubapro  
ScubaXcursion  
Securefit  
Raphael  
SA's Cakeboss  
SSI  
Status Hire  
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3 Bean Hospitality  
Treoc  
Tribe Vibe Products  
Young fellas  
Young industries  
Zavora Lodge



# BEHIND THE “SHARK GUY”

## Andy Brandy Casagrande

By Allison Dickey  
Images by ABC4Explore

Considered the “Shark guy” of *Discovery* and *National Geographic*, Casagrande has been filming sharks since 2002 and has made 57 *Shark Week* films.



**T**he all-consuming passion for underwater creatures started with sharks. As a small child staring at a nature documentary of a shark, he did not believe the creature could be real; it had to have been CGI. But Andy Casagrande soon found out that sharks were very real and simply remarkable.

Andy is low key in his waders as he sits down with me for a cup of coffee in between a busy shooting schedule. He talks with passion whilst his hands fly about as he goes into rhapsodies of all of his stories and adventures.

### HISTORY OF A LIVING LEGEND

Casagrande has been all over the world shooting wildlife, was almost bitten by a king cobra, put a GoPro on the fin of a shark and he has won an Emmy Award. But behind all of the adventures and the successful cameraman is just a guy that is fascinated by wildlife. "It is always about the animal and how graceful, beautiful and majestic they are," he said.

He started studying marine biology until he realised that he would still have to wait a while until

he could work with the animals he loved so much. So he had an epiphany. "I realised that if I was a cameraman or a filmmaker I could still work with scientists and be involved with marine biology but get to do the fun stuff." So Casagrande got up close and personal with nature by getting behind the camera.

### ORGANISATIONS IN COLLABORATION

Casagrande switched between working with *National Geographic* and *Discovery*, working on *Shark Week* and other documentaries like *Earth Live*, where he has filmed many apex predators. "It is just addicting once you start to film predators," he said. "It is pretty horrific but at the same time it is Mother Nature."

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#### OPPOSITE PAGE TOP

Andy Brandy Casagrande is a two-time Emmy Award-winning cinematographer, field producer, and television presenter specialising in wildlife and adventure films around the world.

#### BOTTOM

Fully geared up and ready for a dive.

#### BELOW

Eagerly anticipating the perfect close-up of a tiger shark.

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CASAGRANDE GOT UP CLOSE AND PERSONAL WITH NATURE BY GETTING BEHIND THE CAMERA.

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He admits that he does not have much control over what *Discovery* does with what he shoots. They are trying to cater to everyone and as a result, the shows can be quite dramatic. Some complain that *Shark Week* is too much like a fantasy, while others think it is too science-heavy. However, Casagrande said that his time with sharks is simpler than seen on television. "I have never been underwater with a great white where I hear death metal playing," he said.

### REASONING BEHIND THE WORK

Casagrande believes the images and stories that are told through his shots inspire people to care about sharks. He is a big conservationist so he wants to help change public perception. This is especially true for great white sharks, for which poaching is a big problem. He thinks getting celebrities involved can help in changing the public's perception. That is the reason that Olympian Michael Phelps is involved in the latest season. "With one *Shark Week* show or one *National Geographic* show, fifty million people can watch it," he said. By reaching this many people, Casagrande said: "It is really powerful."

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### ANDY IS A BIG CONSERVATIONIST SO HE WANTS TO HELP CHANGE PUBLIC PERCEPTION.

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Casagrande thinks being passionate is the biggest asset for what he does. He said you do not have to be the best in the world but you have to do it for the right reasons. "Live the life you dream," he said. "When I was a kid I dreamed of studying sharks." Now he gets to study them through his camera lens whenever he wants to. **SM**



#### TOP

Andy is on a mission to document one of the greatest mysteries of modern shark science.

#### MIDDLE

A killer shot of a great white shark.

#### BOTTOM

Andy shoots with the most advanced camera technologies in the world.





# Hot tub **diving**

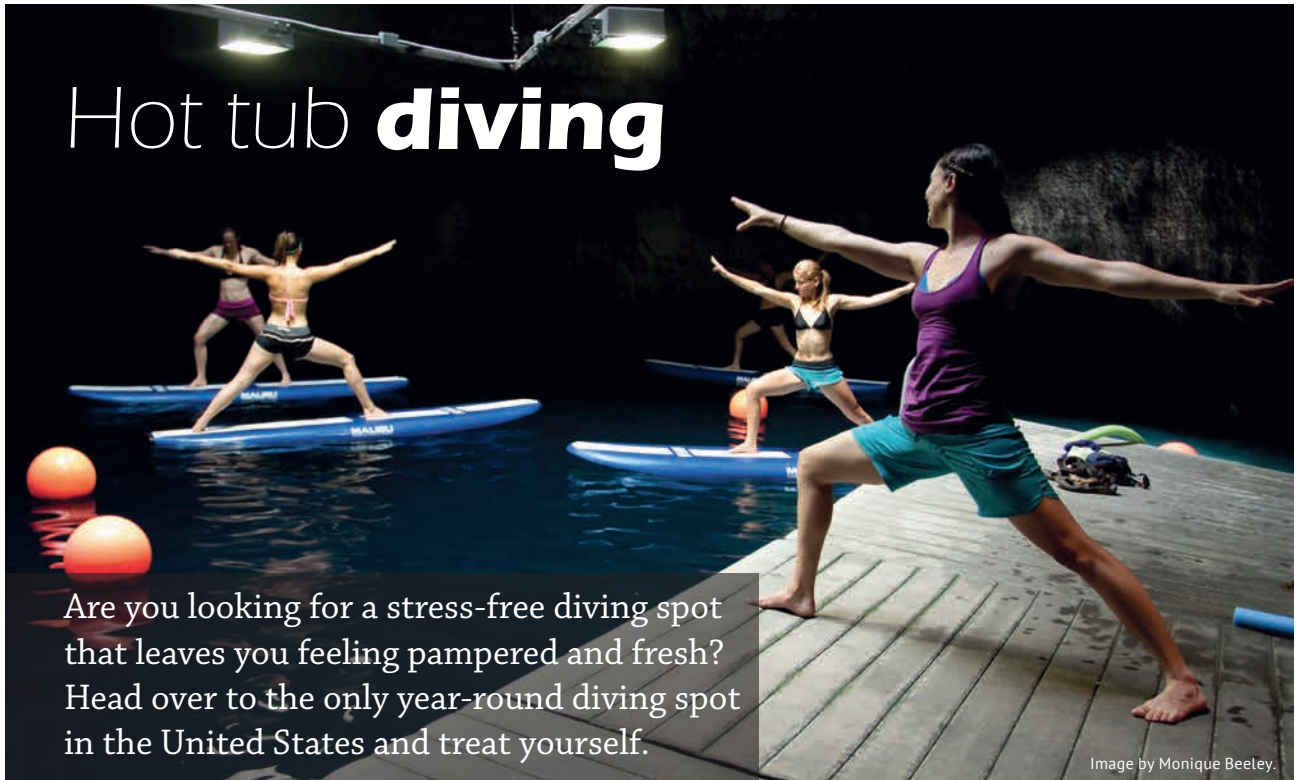


Image by Monique Beeley.

Are you looking for a stress-free diving spot that leaves you feeling pampered and fresh? Head over to the only year-round diving spot in the United States and treat yourself.

**W**e are always looking for unique and wonderful diving locations and once again we have found just that! In Midway, Utah, nestled neatly in the earth's crust and almost out of sight, sits the Homestead Crater. If you did not know it was there, you would probably have walked right past it without realising that beneath you lies a sensuous cave that is replenished daily with 511ℓ of steamy hot, mineral rich water that is pumped up from the earth's interior.

The natural hot spring or rather nature's very own hot tub is an oasis that was formed despite the harsh, dry conditions of Utah. This state is not only known for its dry summers, but also for its extremely cold winters with a record low of -56°C in 1985! Despite the extreme weather conditions, one thing that remains constant is the cave's water – a cosy 32°C to 35°C year-round. That makes it the only year-round diving spot in the United States! Yes, this natural oasis replenishes the soul in the summer and warms it up

in the winter even when snow slides down into the limestone cave from the opening at the top of the cave. Through this hole, an ethereal show of natural light also peers through that would make you feel as if you are on another planet.

This natural hot tub began forming over 10 000 years ago, which in geological terms is fairly young. The slight mound over the crater was created by a build-up of mineral rich water which accumulated enough sediment to form a sloping hole over the cave. A tunnel was built into the crater in 1996, although the spot has been used as an attraction for 120 years. Before the tunnel was built, you had to be lowered through the cave's opening with ropes to have a look at the magnificent natural architecture. Now you can climb a mere 78 stairs and enter through the tunnel for a relaxing swim or a diving experience like no other!

The Homestead Crater is even perfect for beginner divers, since it

is a controlled area that is 11m wide and boasts magnificent blue water. This allows for a stress-free first-time dive and many a diver chooses to get certified here. You are, however, advised not to dive deeper than 14m, as this would result in unsettling the sediments at the bottom. Non-divers and snorkellers can bathe in the steamy hot, spa-like pool, which is also known to ease aches and pains and make your skin feel silky smooth. Only problem is, there is no marine life to look at underwater. What a pity!

Located on the Homestead resort, you can leave the crater feeling refreshed, pampered and catered for. You can also practice yoga to complete this soulful experience such as through the Park City Yoga. □

Have a look at what Park City Yoga offers at [www.parkcityyogaadventures.com](http://www.parkcityyogaadventures.com) before you go!

# ISLANDS OF FIRE

Diving Indonesia's  
Coral Triangle's

By P.J. KOITZÉ







I broke the surface in a daze of shock and disbelief, and removed a plastic bag that had gotten tangled in my regulator. The sun was setting as I wove my way through the plastic debris floating around me in the calm water, and as a Muezzin's call to prayer filled the air, a woman knee-deep in the water just a few metres away disposed of her vegetable scraps in the sea.

**T**his was me coming to terms with my first muck dive in the bay of Ambon, Indonesia. I was overwhelmed, confused and blown away. Maybe it was the four back-to-back flights and 27 hours of travelling. Perhaps it was the incredible amount of life I had just photographed in the most bizarre spot I had ever visited that got to me. It was most probably both. The only thing I was certain of at this stage was that I had never seen such diverse macro life in such an odd setting before. It was awesome.

I was in Indonesia with Leon, my sailing, diving and general adventure companion (who

also happens to be my father-in-law), about to embark on 12 days of what would be the best diving we had ever done in some of the most diverse and pristine locations that Indonesia has to offer. Our trip aboard the *Mermaid I* liveboard dive boat embarked from Ambon Bay, a macro photographer's dream location and renowned muck diving spot.

We headed for the remote volcanic Banda Islands, offering massive wall dives that were crowded with prehistoric sea fans, big pelagics, banded sea snakes and generally epic diving. The trip culminated in diving the remote sections



of Raja Ampat, moving through the Misool area and ending in Sorong in the Northern stretch of the massive marine reserve. Trying to summarise the experience of diving in Indonesia is a difficult task as every dive could constitute its own article, but I will attempt to share some of the highlights of our Indonesian adventure.

### **AMBON: MACRO MUCK MANIA**

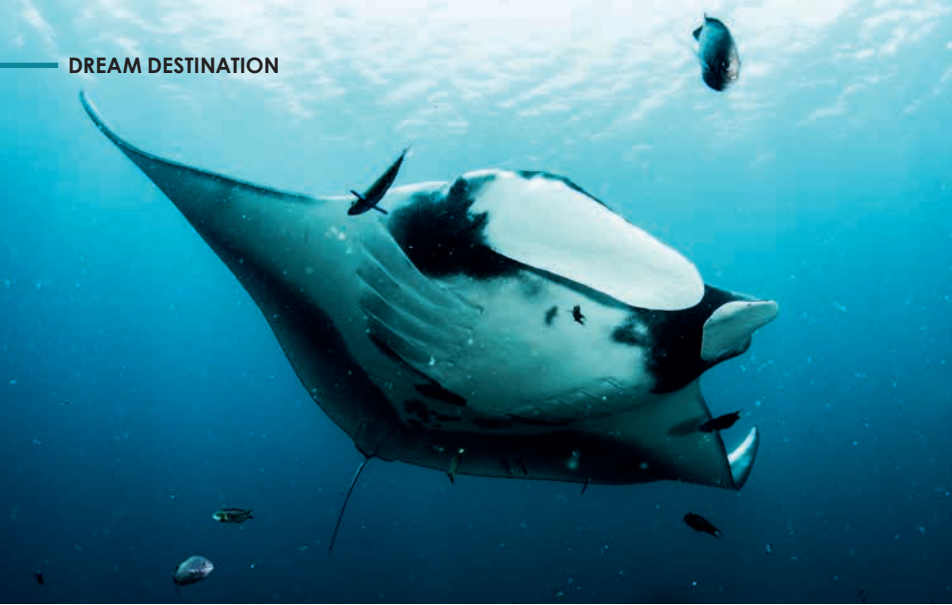
As I briefly explained, Ambon is a weird place to dive, especially if your trip was to start here. Although the bay of Ambon is extremely picturesque, the unfortunate reality about most of Indonesia is that many towns and harbours are extremely

polluted and floating plastic is quite common. Being completely new to muck diving, I had no inkling of what to expect as we descended on our first dive. The term muck diving never really sounded like something I would like to do. I always saw myself as more of a pristine reef enthusiast but I am always open to new things, so I tried to keep an open mind as I descended to the featureless sand beneath me.

Once you sink below the surface in Ambon, things get really weird really fast. Most dive sites are on sloping black sand walls within about 10m of the shore, and when you settle on the sand and start looking around, you do not see much but patches of reef, some cans, bottles

and a few anemones. At this stage you might be forgiven for questioning your decision to take four back-to-back flights to look at someone's empty Coke can. At least, this was my train of thought when I was signalled over by our incredible guide, Adnan to have a look at something. What followed would be repeated on almost every dive the next 12 days: Adnan would point; I would look and see nothing. Adnan would point again, I would look again and then finally I would see something amazing. In this case, it was a rhinopias or scorpionfish native to Indonesia.

Ambon is a paradise for different sorts of scorpionfish and very rare frogfish species such as the psychedelic frogfish,



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IF YOU ARE LOOKING FOR PRISTINE REEFS WITH AN UNIMAGINABLE ABUNDANCE OF MARINE LIFE, I DOUBT MANY PLACES COULD TOP RAJA AMPAT.

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and once you develop more focus, you start seeing them everywhere. Frogfish, the most colourful nudibranch, seahorses and basically everything a macro enthusiast could want, Ambon has it, although we have yet to dive Lembeh (it is on the list). I highly recommend Ambon for macro photographers, and I think it is safe to say that after only two days of muck diving, I was loving it. All too soon though, *Mermaid I* lifted her anchor and it was time to make passage to our next destination, the epic Banda Islands.

### BEAUTIFUL BANDAS: THE ISLANDS OF FIRE

The Bandas are a group of beautiful, small volcanic islands situated about 2,000km east of Java that offer not only pristine diving but also fascinating history. During the 1600s and 1700s, the small islands were at the centre of the world's spice trade, and were under Portuguese and Dutch rule for many years, resulting in the familiar terrible consequences of colonialism. Luckily their remoteness has ensured that the islands are in pristine



condition above and below the water, and in stark contrast to the waters of Ambon. The clear waters around the Bandas feel very much untouched.

Our first Bandas dive was incredible and if I had to sum up my impression in one word, it would be “prehistoric”, and a wide angle photographer’s dream. The islands rise from depths of up to 3km and offer wall diving that reminded me of the Brothers Islands in the Red Sea. Massive sea fans and barrel sponges line the vertical walls surrounding the islands and when you look out to the deep blue, dogtooth tuna, giant trevally and occasionally scalloped hammerhead sharks patrol on the edge of visibility, which is regularly over 30m.

There were many highlights while diving the untouched walls of the Bandas, but I will undoubtedly never forget diving amongst the many banded sea kraits that make the reefs around the smoking volcano, Gunung Api (Fire Mountain) their home. Diving here is special; Gunung Api is a semi-active volcano with smoke regularly bellowing from its gaping mouth and black lava flows running down its sides into the sea where bubbles and jets of heated water can be seen and felt gushing out of the sand patches in the reef. Now, throw into this bizarre mix dozens of metre-long, highly-venomous (they do not bite) and over inquisitive banded sea kraits, crystal clear water and abundant pelagics, and you will get an idea of the Bandas.

Another unexpected highlight was diving a small, unassuming patch of rocks next to a pier on the main island, Banda Neira, where we got the opportunity to witness and photograph the playful and colourful Mandarin fish at dusk. Before we knew it, our time in the Bandas had run out and *Mermaid I* set its course to the island of Misool and the abundant reefs of Raja Ampat. I could not really imagine how it could get any better but as always I was open to suggestions.





### RAJA AMPAT: PARADISE UNDERWATER

The last five days of our trip were spent diving Misool and the Danpier Straights in the greater Raja Ampat area. If you are looking for pristine reefs with an unimaginable abundance of marine life, I doubt many places could top Raja Ampat.

Although visibility was occasionally not as crystal clear as in the Bandas, the extreme amount of marine life made up for it. My only problem was that I never knew whether to throw on the wide angle or macro lens as every dive would offer practically everything a photographer could ask for; from incredible wide

scenes to macro subjects everywhere. One particular instance, where I was very happy to have the macro lens, was when our guide Adnan, excitedly gestured me towards a gorgonian fan. I honestly could not see what he was pointing at but I took a photo anyway, just to make him stop waving around! It was only when, looking at my camera's LCD screen, that I noticed the tiny pygmy seahorse he had been pointing out to me.

On the same dive, we also had the opportunity to photograph one of my favourite macro subjects: The orangutan crab. There was just so much to see and photograph that it





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LONG, SLOW DIVES ARE THE NORM AND CAN EASILY BE DIVED WITH JUST A RASH VEST AND BOARD SHORTS.

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was difficult to get out of the water every day, despite the fact that we were regularly doing four 90 minute dives daily. Diving on nitrox combined with the warm to mild sea temperatures makes the diving here comfortable and mostly easy. Long, slow dives are the norm and can easily be dived with just a rash vest and board shorts. Just watch out for the fire coral!

As the end of our adventure loomed on the horizon like an Indonesian rain storm, the coral triangle had two more surprises in store for us. The first being the opportunity to dive the picturesque mangrove reefs where corals seemed to be stacked like flower arrangements in gin clear water with mangrove trees forming the backdrop for amazing photos and scenes.



The second surprise happened as the final day of diving in the Danpier Straits dawned on *Mermaid I*. The mood on-board was sombre, but Raja Ampat had one last surprise for us. I had an idea that it might be something big when Adnan convinced me to use the wide lens for the last dive, and as we dropped to the reef below, the show started. Oceanic mantas swooping in formation into a feeding station provided the most amazing end to an incredible trip, and I have to admit, I was so entranced by the flying giants that I managed to surface with my air gauge hopping on zero. All too soon we were awaiting our return flight in the busy port of Sorong and already the experiences of the preceding two weeks seemed like fantasy, in the smog and city traffic.

Reliving the experience of diving in the waters of Indonesia through our images, I almost cannot believe that we were there. Words fail to describe the intensity of experience when diving in the coral triangle, but I can wholeheartedly recommend it to anyone who is looking for a bucket list diving destination. There are various budget options and I can honestly say that after diving over the world, it was the best diving and underwater photography both I and Leon had ever experienced. I am unsure where we should go next as I am afraid most places will be a disappointment after what we experienced in Indonesia, but as I said, I am always open to suggestions. So, on to the next one! **SM**



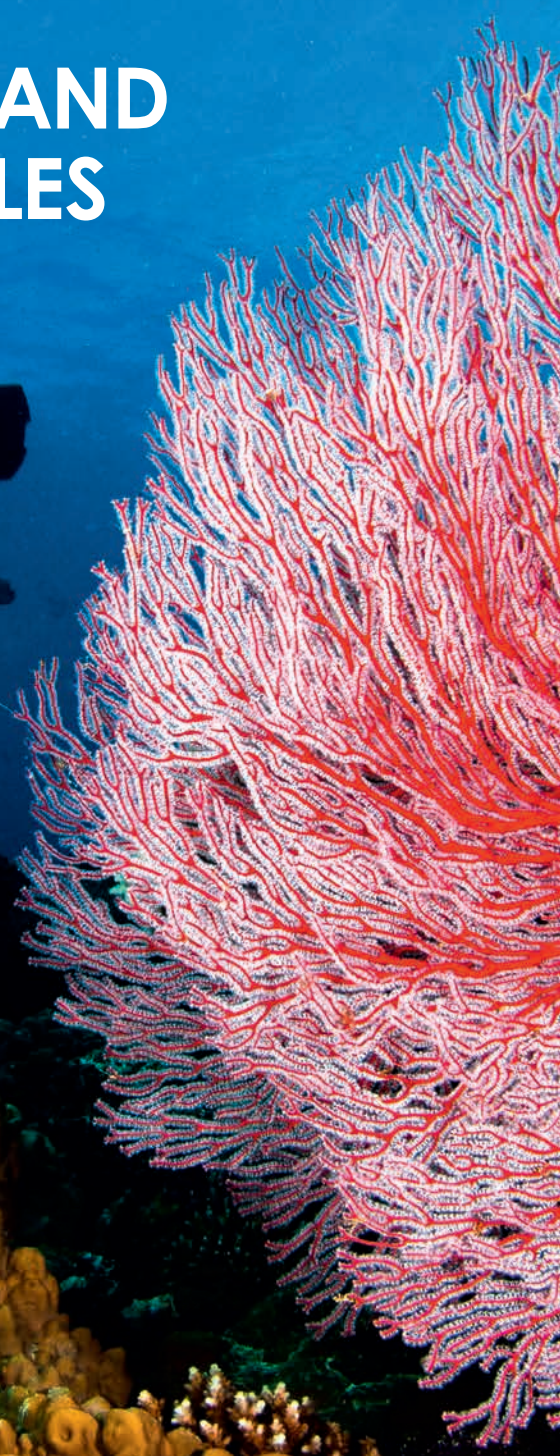
# DIVING, MEDICAL PROBLEMS AND ACUPUNCTURE NEEDLES



## Mermaid Medicine

By Janneke Vermeulen

Have you ever heard about this combination? Mermaid Medicine symbolises medical knowledge. In Celtic sagas the mermaid swam to the shore and gave advice to humans on how to cure diseases.



Diving in Micronesia with Dr Simon Mitchell from New Zealand who is an anaesthesiologist, and a specialist in diving and hyperbaric medicine. Image by Dr Simon Mitchell

**A** diver herself, Janneke Vermeulen understands what it is like underwater and what water pressure can do to your body and mind. She is currently the only acupuncturist in the world qualified to treating divers with specific diving-related problems and is adamant on sharing her expertise to ensure optimal diver health. She has successfully treated many divers from around the country, making their descent and ascent in the water much easier and a lot safer.

### DIVING MEDICAL PROBLEMS

Not being able to clear the ears or having difficulty equalising is the most common problem experienced by divers and it is often caused by a common cold, rhinosinusitis and allergic or non-allergic rhinitis. Having to call a dive due to

equalisation problems is very frustrating but and can be extremely painful with a high risk of causing ear drum perforation when ignoring ear pressure. The fact that acupuncture can help to get rid of these ear, nose and throat disorders and other diving medical issues is not well-known to most divers around the globe.

### THE ART OF ACUPUNCTURE

Acupuncture has a long history as a therapeutic treatment dating back to around 4 000 B.C. and the earliest acupuncture needles were made of sharpened stone. One of the oldest medical books is the *Neijing Suwen* – compiled around 100 B.C. – about internal diseases from the Yellow Emperor *Huang Di*. This book articulates how vital energy (Qi) streams in our body through specific channels, also called meridians, which have connections with our organs and each organ is connected to a specific emotion. Qi exists of a Yin and Yang part and these two opposites must be in balance with each other. If these are imbalanced, disease may occur.

A Chinese medical diagnosis is based on an intake (medical history) combined with, among other things, pulse, tongue and facial diagnosis. This determines the selection of acupuncture points that need to be punctured and which food and/or lifestyle advice is required. Through the ages, the needles have gained a lot of subtlety and nowadays there are sterile and disposable acupuncture needles for single use that are made of surgical stainless steel.

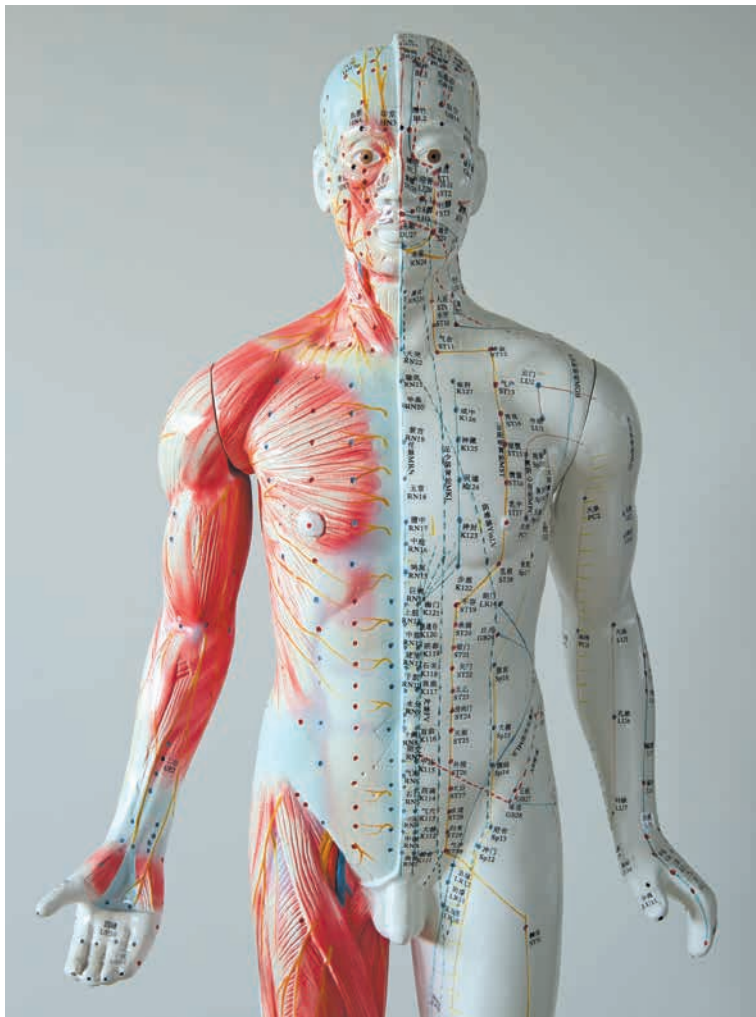
### BENEFITING THE DIVER

In her practice in The Hague, Netherlands, Janneke Vermeulen: A physiotherapist, acupuncturist, Chinese herbalist and specialist in Western diving medicine, treats divers from the whole country with a wide range of health issues, especially chronic or recurring ENT disorders that affect equalising of the ears and sinuses. Other health issues Janneke treats include TMJ (temporomandibular joint dysfunction) disorders, sea sickness, stress, tiredness, high blood pressure, migraine, lung disorders, addiction to smoking, being overweight, neck and back disorders, muscle cramps, etc.

Divers with these medical problems can benefit from the positive effects of acupuncture treatment. Acupuncture can transform phlegm and reduce its production, decreasing swelling of the mucous membranes in the nose, sinuses and Eustachian tube, and also addresses underlying energy deficiencies or stagnation of Qi. When the nose and

#### BELOW

Model anatomy of an acupuncture doll that shows needle points. Image by Janneke Vermeulen



Eustachian tube have a free air passage, the diver will be able to clear the ears well (in case the clearing techniques are performed correctly). Having more energy, less stress and a better immunity is a result of acupuncture and the diver will become ill less quickly in general. The diver will feel better under and above the water surface.

Lung function can be improved whereby breathing will be easier and the diver will be able to stay underwater for longer. When having lower back problems, jumping into the ocean may be fine but climbing the stairs of the boat can be very painful. Acupuncture can relieve pain, muscle tension and improve the mobility of the spine. Acupuncture can also contribute to lower risk factors on decompression illness like tiredness, being overweight and decreased blood circulation. All diving rules regarding the laws of physics need to be performed well in any circumstance.

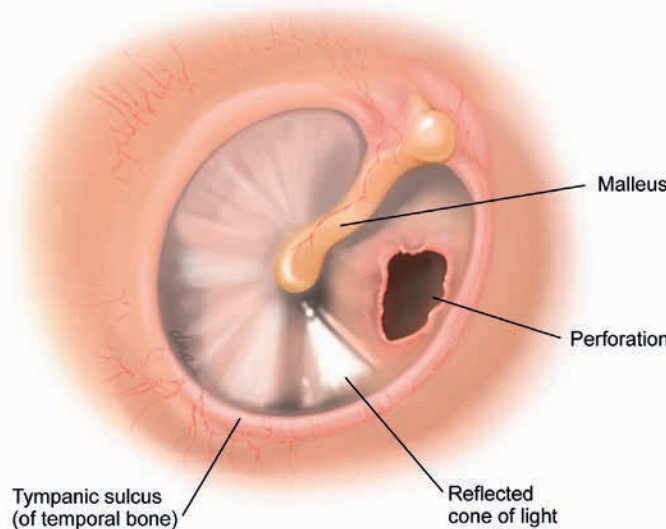
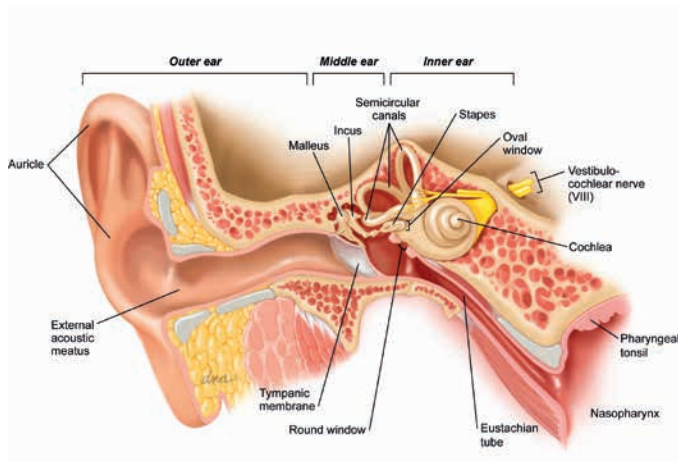
### THE ORIGIN OF THE SPECIALISM

The idea of treating divers with diving medical problems was born in 2003 when one of Janneke's patients asked her to treat her equalising problem that occurred every third day of her diving holidays. This problem resulted in not being able to dive anymore and having to stay on deck the rest of the holiday. After several treatments and a diving week in Egypt, the patient came back to the practice happy, telling Janneke that she did not experience any ear problems at all and she was able to dive every day!

Being triggered by all the magic underwater stories from another diving patient, as well as having her own special memory of snorkelling once at Koh Samet in Thailand, Janneke decided to get her diving licence. With just a leaflet "Diving without problems with acupuncture" and an interview in the Dutch Magazine (*Duiken*) in May 2004, the specialism: *Diving Medical Acupuncture* was born. It is a great challenge for Janneke to keep divers diving happily and making diving more safe and enjoyable!

### ABOUT HER BOOK

All Janneke's diving related knowledge is collected and structured in her well endorsed book *Diving Medical Acupuncture*, published by Singing Dragon on 19 April 2018. This innovative information can be shared with acupuncturists, non-acupuncture medicals and divers worldwide. *Diving Medical Acupuncture* describes the medical conditions that can prevent, complicate or result from diving and other water sports, and provides effective clinical treatments; it is an integration of Western diving medicine, diving techniques and Chinese medicine. Complete with anatomical diagrams and acupuncture point charts, this is a practical resource for acupuncture clinicians who deal with the issues associated with diving. Advice for divers is given at the end of each chapter and is available as a handout in downloadable form. **SM**



**TOP**  
A detailed illustration depicting the anatomy of the ear.

**ABOVE**  
An illustration exhibiting a perforated ear drum.

**RIGHT**  
The cover of Janneke Vermeulen's book *Diving Medical Acupuncture*.

# THE WHIPLASH SHARK

By Jamie Watts and Malcolm Nobbs



After an uncivilised early start, Malcolm found himself in the dawn twilight at 30m, atop an uninspiring rubble reef shoal. But the hour, the surroundings and the early light did not temper an excitement that had been building for years.

“I will never forget my first sighting of a thresher shark. I was both thrilled and stunned. With its disproportionately large eyes and huge, slender, scythe-like tail (half the length of its body), its appearance is unlike that of any other shark. I have been privileged to see and photograph many sharks, but this species is particularly special.”

## THRESHER PHYSIOLOGY

The three species of threshers (although DNA studies suggest there may be a fourth) are all rather large, partly warm-blooded sharks, most closely akin to the great white and its cousins. If you ignore the length of that enormous, elegant tapering tail, threshers are similar in size and build to the larger and bulkier requiem sharks: Maybe most similar to an oceanic whitetip, a silky or to the threshers' slightly closer cousins, the makos and porbeagles. The smallest species, the pelagic thresher, which is found at Monad shoals and right through the warm Indo-Pacific, matures at about the same size and with the same bulk as a human, at about 12 years old. A large adult female might be two metres long from her snout to the fork in her tail and weigh 100kg, and the long upper tail can be over three-and-a-half metres in total length.

The basic body is that of the stocky, muscular, active pelagic shark but then attached is that gorgeous, bizarre tail. Basically, the over-sized top lobe of the tail, just shy of the same length of the entire body again, has become a giant whip, which the shark uses to stun its prey. In recent years, threshers have been observed a few times hunting underwater and have been seen flicking their tail both over the top of their heads and around to the side into shoals of small fishes, stunning them. The tail flows behind the animal like a ribbon as it swims in a relaxed state, but snaps with incredible force when used in hunting. Orcas use their rather different tails to stun herring in a similar way.

If you can stun your prey rather than chase it down, you do not need such a mouthful of teeth as other similarly sized hunters. The small, down-turned mouth, combined with the huge eyes (threshers hunt in deep, dark waters), gives a somewhat comical, cartoonishly startled and scared look to these sharks. They are all rather small-toothed for such large sharks and their prey consists mainly of moderately small fishes. The pelagic threshers seen in the Philippines have large eyes, where the temperate common threshers have smaller, more “normal-sized” eyes and the bigeye threshers have very odd, giant eyes that wrap around to the top of its head (enabling it to look upwards at depth for prey that is silhouetted against the dim light filtering down).



## DID YOU KNOW?

There may be a **4<sup>th</sup>** undiscovered species of thresher sharks

Also known as the **Fox shark** because of its unusually large tail fin and intelligence



Their **unique tail**, referred to as a giant whip is used to stun its prey and is as long as the shark itself

The biggest thresher ever caught was **9.75m** and weighed 567kg



Thresher sharks prefer **deep** open ocean waters

They are not a **threat** to humans and are rarely seen by divers



Thresher sharks are related to **great white sharks**

The pelagic thresher that visits Monad Shoal off Malapuasca Island seems to live a similar life to its closest cousin: The better-studied, slightly larger bigeye thresher, which is found in warm seas worldwide. Both prefer tropical seas, moving into warm temperate areas as large adults when their body size retains heat and their partial warm bloodedness allows them to tolerate slightly cooler seas where food is more plentiful.

### THE TAIL FLOWS BEHIND THE ANIMAL LIKE A RIBBON AS IT SWIMS IN A RELAXED STATE, BUT SNAPS WITH INCREDIBLE FORCE WHEN USED IN HUNTING.

Threshers stay in warm, shallow water at night, straying occasionally into diving depths, then dive deeper (far beyond the range of divers) during the day into colder and richer waters to hunt. Bigeyes have been known to dive over 700m into water just five or six degrees Celsius, although 250m and 10°C is more normal. The pelagic threshers seem to live their lives a little shallower and a little warmer.

The two (or three) species of tropical threshers have a heat-retention system warming, in particular, the blood supply to their large eyes and brain. However, their heat-retention systems are not nearly as well-developed as the warming systems of makos and cool-water giant tunas (who use theirs for their swimming muscles). The system of warming blood to the eyes and brain is also found in bigeye tunas – another tropical hunter which dips into richer, deeper water to find prey. Threshers normally cruise slowly, like most other large sharks, at around one to two knots, certainly much slower than their more active and powerful cousins. They are constantly on the move though, and tropical threshers can still cover huge distances as they are known to migrate thousands of kilometres.

The biggest of the threshers, the stocky, smaller-eyed common thresher, spreads into cooler and richer temperate waters. It grows and matures a little faster and has a better developed counter-current blood-warming system for its core swimming muscles than its smaller cousins. This partial warm-bloodedness is what allows this species to remain active in cooler seas, where they forage over the edges of continental shelves. Like other cool-tolerant sharks, common threshers drift with the warmth and productivity of the summer waters. Access to these richer seas allows common

threshers the luxury of not having to range so widely, as their tropical cousins, to get their food.

These days, a very big common thresher would be a three-metre, 200kg shark (five-and-a-half metres with the tail). A couple of decades ago, fishermen were bringing in much bigger sharks, but the average and maximum sizes of sharks have dropped in the last 20 or so years, reflecting the fisheries-driven decline in the populations of large sharks all over the world. Interestingly, though, the biggest thresher ever caught (a monster massively larger than any other ever measured) was 9.75m to the tip of its tail and weighed 567kg and was caught in a trawl as recently as 2007.

A few areas around the world seem to be hotspot areas for threshers, although few of them bring these sharks into contact with divers. There are areas of concentration (perhaps breeding and nursery areas) off the coasts of Cuba, the Atlantic, Spain, Portugal, the Maldives, some of the central Pacific seamounts east of the Mariana Trench and the edge of the shelf off north-western Australia. Monad Shoal, off Malapascua, a small island to the north of Cebu, is one of a handful of areas divers can regularly encounter threshers, as they come in to be cleaned at dawn before heading deeper. There are reports of encounters off Bali, as well as some areas of the Red Sea (off central and southern Egypt).

### THE BIGGEST THRESHER EVER CAUGHT (A MONSTER MASSIVELY LARGER THAN ANY OTHER EVER MEASURED) WAS 9.75M TO THE TIP OF ITS TAIL AND WEIGHED 567KG.

Like all the big pelagic sharks, thresher numbers worldwide dropped in the '80s and particularly in the '90s, with the rise of shark finning. That tail, of course, provides a lot of fin. Threshers seem to reproduce relatively well, often away from where there are concentrations of people. Best estimates are that threshers make up somewhere around 10-15% of pelagic shark catches. This means that the original, worldwide populations of these sharks were probably in the low millions. It is difficult to clearly estimate now but I would hazard a very rough guess of tens to hundreds of thousands of threshers remain, spread far and wide. **SM**



# PLASTICS IN THE MARINE ENVIRONMENT

## Better waste management or plastic embargos?

By The *SUBMERGE* Team and Plastics SA

What is cheap, strong and everywhere around us? Plastic! And it is waste that nature just cannot digest. The United Nations Environment Programme (UNEP) continues to promote anti-plastic language calling for bans on plastic bags and single-use plastic items. Unfortunately, bans on specific items do not address the underlying cause of marine debris. The real focus then should be on the entire waste management system.

### **A TIDAL WASTE DUMP**

Plastic pollution in the ocean was first reported by scientists in the 1970s, yet in recent years it has drawn tremendous attention from the media, the public and an increasing number of scientists. A simple walk on any beach, anywhere, and the plastic waste spectacle is present. All over the world the statistics are ever growing. Tons of plastic debris is discarded every year, everywhere, polluting lands, rivers, coasts, beaches, and oceans. It has become a major global environmental problem.

We are in the front row of the greatest plastic tide ever faced. Plastics debris is known to be present in all of the world's oceans. Millions of tons of rubbish enter the world's oceans each year ultimately killing marine life and seabirds. The extremely visible nature of much of this contamination is easy to convey in shocking images of piles of trash on coastlines, marine mammals entangled in fishing nets, or seabird bellies filled with bottle caps, cigarette lighters and colourful shards of plastic.





## WASTE WITH STAYING POWER

Plastics play a significant role in energy and resource savings, longer food shelf life, improved healthcare, consumer protection and reduced greenhouse gas emissions. So plastic is versatile, lightweight, flexible, moisture resistant, strong and relatively inexpensive. Those are the attractive qualities that lead us, around the world, to over-consumption of plastic goods. However, durable and very slow to degrade, plastic materials that are used in the production of so many products all, ultimately, become waste with staying power. Our tremendous attraction to plastic, coupled with over-consuming, discarding, littering and thus polluting, has become a combination of lethal nature.

## PRIORITISING THE MAIN CONCERN

According to a study by the National Centre for Ecological Analysis and Synthesis published in *Science Magazine* in 2015, inadequate waste management dominates the sources of plastic waste in the oceans. Linking worldwide data on solid waste, population density and economic status, the study estimated 4.8 to 12.7 million metric tons of land-based plastic waste entered the ocean in 2010. Population size and the quality of waste management systems were key factors in determining contributions to ocean waste.

The Asia Pacific Economic Cooperation (APEC) forum included language in the 2016 APEC leader's statement regarding the need for improved waste management to address marine debris. Similarly, the G20 released its Marine Litter Action Plan, which promotes investment in waste management infrastructure as the solution to marine debris.

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WASTE HAS BECOME A MAJOR GLOBAL ENVIRONMENTAL PROBLEM.

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## PLASTICS WITH A CAUSE

Plastics SA represents the plastics industry in South Africa and provides strategic leadership to the industry on sustainability issues such as plastics marine debris. Here are their project activity suggestions in addressing marine litter:

## Waste Management and Recycling

Research is conducted to determine the state of waste management and recycling and the opportunities to establish plastics recovery and recycling infrastructure. Training is provided to plastics collectors, recyclers and waste managers.

## Education

Schools and communities in the river catchment areas are trained on plastics and recycling and provided with plastics education materials. Marine organisations such as Marine and Coastal Educators Network are supported with workshops. Plastics SA is a founding member and supporter of the newly formed network for Africa, the African Marine Waste Network and supporting the development of a "Best Practice Guideline for Africa" on marine pollution.

## Litter booms

In order to prevent plastics entering the ocean, extensive research is undertaken to develop the most suitable litter boom that could be placed in rivers to catch plastics floating downstream, and then be collected.

## Clean-up campaigns

Clean-up events are supported such as Water Week, World Environment Day, World Oceans Day, Clean-up and Recycle SA Week, Recycling Day and International Coastal Clean-up Day. Sport events such as Two Ocean Marathon and Cape Argus Cycle Race in Cape Town are supported with plastics waste management.

## Protect our oceans

So what can you do? Marine plastics pollution may be alleviated by decrease in their use, increasing the rate of recycling and restricting uncontrolled discards. Plastics can and do make sense in some contexts but we are not yet doing enough when it comes to plastic recycling. Whether we like it or not, plastics are here to stay. So do your part and become plastic savvy. Familiarise yourself with what plastics can be recycled and keep reusable plastics out of landfills. **SM**

For information on plastics in South Africa visit [www.plasticsinfo.co.za](http://www.plasticsinfo.co.za)

# VIEWFINDER

Jenny Stromvoll



## THE GLASS CASTLE

### LOCATION

Safety stop (5m), Ponta do Ouro, Mozambique.

### DETAILS

After strong winds many jellyfish end up inshore. Most common is the root-mouth jellyfish.

### EQUIPMENT

Sony Nex-5, Lens 18-55mm with 1 x Inon UCL-165 wet diopter macro lenses, 1/160 at f9, ISO 200, 1 x Inon D2000 strobe and 1 x Black Molly III (2600 lumens) video light.

## SOFT CORAL HAVEN

### LOCATION

Riaana's Arch reef (23m), Malongane Bay, Mozambique.

### DETAILS

The common name, porcelain crab, comes from their propensity to drop appendages (fragile as porcelain) which they grow back with great rapidity. They are found within the soft coral *Dendronephthya*.

### EQUIPMENT

Canon PowerShot S110, 2 x Inon UCL-165 wet diopter macro lenses, 1/160 sec at f8, ISO 160, 1 x Inon D2000 strobe.



## AMBUSH IN SLOW MOTION

### LOCATION

Close reef (18m), Malongane Bay, Mozambique.

### DETAILS

Once you find a pair of Harlequin shrimps (*Hymenocera picta*) you will hopefully find them more than once. They tend to stay at the same place for a while (as long as they can find a supply of starfish in that area). They feed on starfishes which will regenerate. Unfortunately they can only regenerate a limited number of times before they die. They are favourable to use a snoot on them to enhance their character.

### EQUIPMENT

Sony Nex-5, Lens 30mm macro with 1 x Inon UCL-165 wet diopter macro lens, 1/125 at f14, ISO 200, 1 x Inon D2000 strobe with a Retra INON snoot, 1 x Black Molly III (2600 lumens).





## RIDING THE TUBE

### LOCATION

Aquarium reef (23m), Malongane Bay, Mozambique.

### DETAILS

The harlequin crab (*Lissocarcinus orbicularis*) is a swimming crab that often is associated with large sea cucumbers, anemones and jellyfish, where they seek refuge. This one I found inside a tube anemone, it sits on the edge of the anemone where it feeds on particles coming past.

### EQUIPMENT

Sony Nex-5, Lens 18-55mm with 1 x Inon UCL-165 wet diopter macro lens, 1/100 at f8, ISO 200, 1 x Inon D2000 strobe with a Retra INON snoot, 1 x Black Molly III (2600 lumens) video light.

## DESERT ROSES OF THE OCEAN

### LOCATION

Tidal pool (2m), Ponta do Ouro, Mozambique.

### DETAILS

This is an undescribed species of sap sucking slug. They are mainly found in algae rich tidal pools. Around 15mm long it was nicely crawling on *Halimeda* algae.

### EQUIPMENT

Sony 6300, Lens 18-55mm with nauticam CMC-1 wet diopter 1/160 sec at f11, ISO 200, 1 x Inon D2000 strobe and 1 x Black Molly III (2600 lumens) video light.





## POLKADOT KISS

### LOCATION

Blacks reef (18m), Ponta do Ouro, Mozambique.

### DETAILS

The *Ceratosoma tenue* nudibranch have no common name even though its commonly found on our sandy reefs. It is a fairly large nudibranch up to 8cm long. This individual was assuming a roaring position and it had a great background for a soft bokeh effect. When it comes to shooting shallow depth of field with a wet diopter, a steady hand is essential.

### EQUIPMENT

Sony 6300, Lens 18-55mm with nauticam CMC-1 wet diopter, 1/160 sec at f5, ISO 250, 1 x Inon D2000 strobe and 1 x Black Molly III (2600 lumens) video light.



## INTERTWINED

### LOCATION

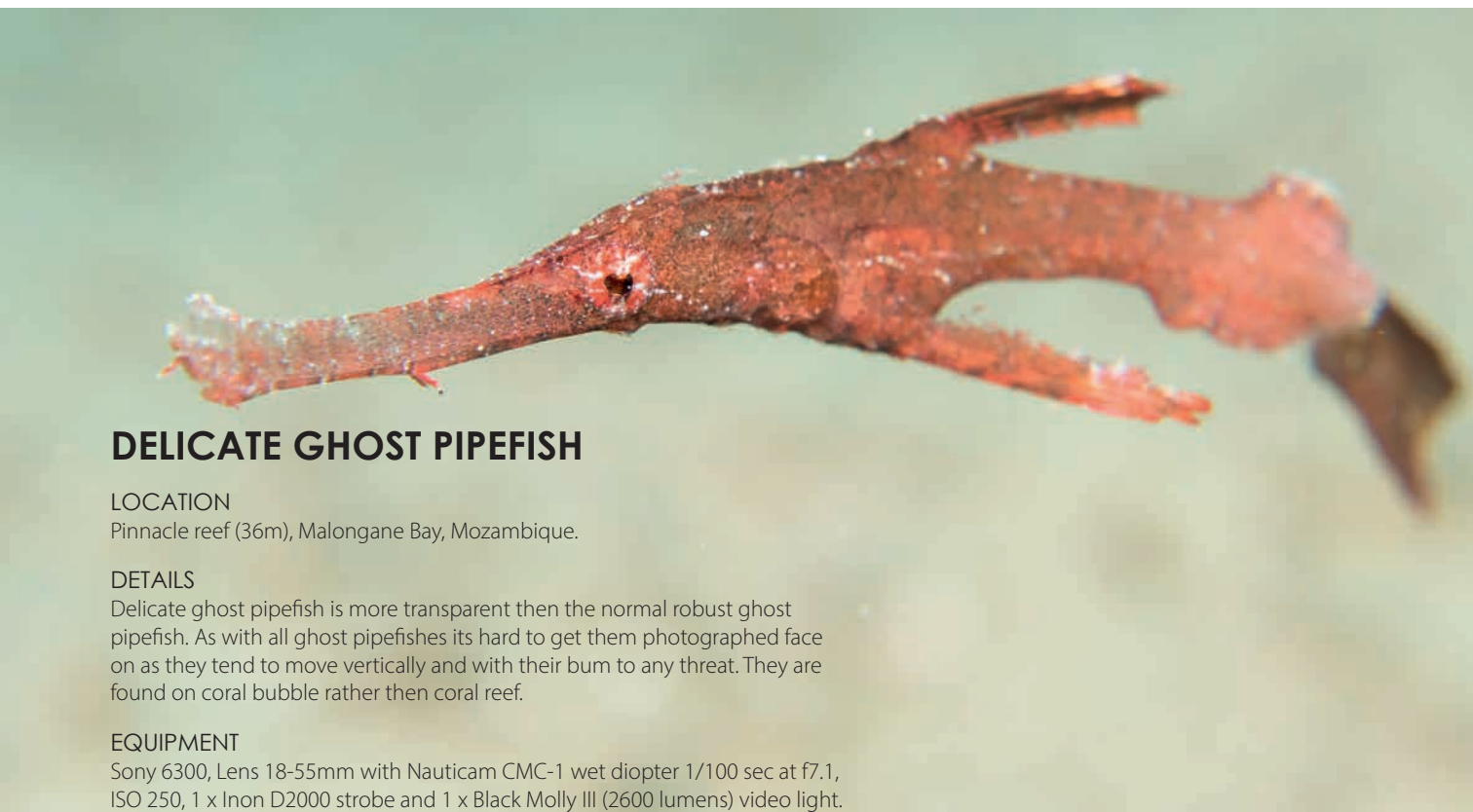
Stables reef (34m), Malongane Bay, Mozambique.

### DETAILS

The Réunion seahorse (*Hippocampus borboniensis*) is a synonym of *Hippocampus kuda*. It's a seahorse that is threatened by fast habitat declination. They often live where there is ongoing bottom trawling, which means they end up as bycatch. Here they live close to reef systems in current prone areas.

### EQUIPMENT

Sony 6300, Lens 18-55mm with 1 x Inon UCL-165 wet diopter macro lens, 1/160 at f5.6, ISO 250, 1 x Inon D2000 strobe and 1 x Black Molly III (2600 lumens) video light.



## DELICATE GHOST PIPEFISH

### LOCATION

Pinnacle reef (36m), Malongane Bay, Mozambique.

### DETAILS

Delicate ghost pipefish is more transparent than the normal robust ghost pipefish. As with all ghost pipefishes it's hard to get them photographed face on as they tend to move vertically and with their bum to any threat. They are found on coral rubble rather than coral reef.

### EQUIPMENT

Sony 6300, Lens 18-55mm with Nauticam CMC-1 wet diopter 1/100 sec at f7.1, ISO 250, 1 x Inon D2000 strobe and 1 x Black Molly III (2600 lumens) video light.

## GALAXY RIDER

### LOCATION

Washed up on shore,  
Ponta do Ouro,  
Mozambique.

### DETAILS

After a strong north east  
wind our bay gets filled up  
with blue bottles. Among  
them are their predators,  
the pelagic sea swallows.  
The wind has no mercy, once  
in the bay their fate is  
already decided, both  
predator and prey will die.

### EQUIPMENT

Sony 6300,  
Lens 18-55mm with  
Nauticam CMC-1 wet diopter,  
1/80 at f8, ISO 200,  
1 x Inon D2000 strobe  
and 1 x Black Molly III  
(2600 lumens) video light.



## CONFRONTING

### LOCATION

Stables reef (34m), Malongane Bay, Mozambique.

### DETAILS

This is a juvenile toby or also called the  
sharpness pufferfish. The colours  
are spectacular and its an easy fish  
to photograph. The skin of a toby  
is very venomous so its not inclined  
to move away from predators.

### EQUIPMENT

Sony Nex-5, Lens 18-55mm with  
1 x Inon UCL-165 wet diopter  
macro lens, 1/125 at f10, ISO 200,  
1 x Inon D2000 strobe,  
1 x Black Molly III (2600 lumens)  
video light.







## BEAUTIFUL TRAPPED

### LOCATION

Safety stop (5m),  
Ponta do Ouro, Mozambique.

### DETAILS

Most divers diving with us know I am obsessed with the jellyfish. Various drift fish and juvenile brittlestars are amongst their tentacles seeking protection from predators.

### EQUIPMENT

Olympus OMD EM5 mk1, Sony Nex-5, Lens 18-55mm with 1 x Inon UCL-165 wet diopter macro lens, 1/160 at f9, ISO 200, 1 x Inon D2000 strobe and 1 x Black Molly III (2600 lumens) video light.



## SKELETONS IN THE CLOSET

### LOCATION

Blacks reef (18m), Ponta do Ouro,  
Mozambique.

### DETAILS

The skeleton shrimp is a family of amphipods, they got their common name because of their slender built bodies that virtually disappear amongst the branches of hydroids. This species is minute and only spotted because their colour, bright orange, stands out from the surrounding coral.

### EQUIPMENT

Sony 6300, Lens 18-55mm with Nauticam CMC-1 wet diopter 1/160 sec at f5.6, ISO 250, 1 x Inon D2000 strobe and 1 x Black Molly III (2600 lumens) video light.

## AQUA DAISIES

### LOCATION

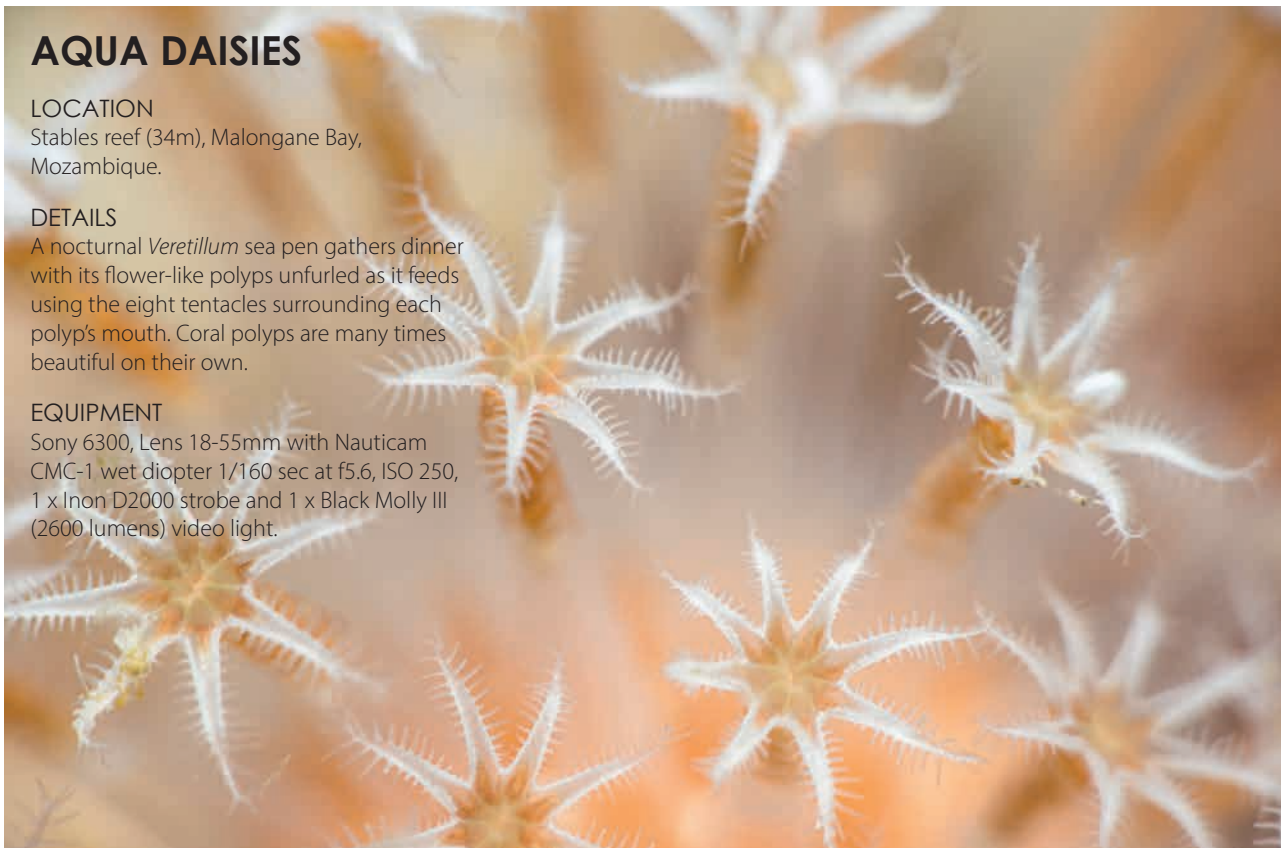
Stables reef (34m), Malongane Bay, Mozambique.

### DETAILS

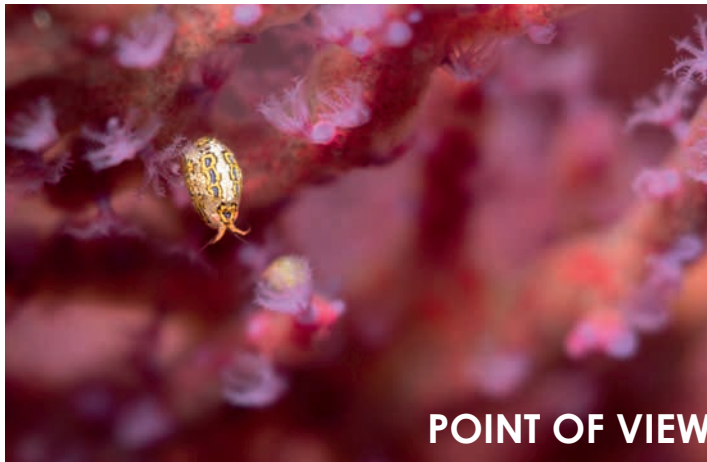
A nocturnal *Veretillum* sea pen gathers dinner with its flower-like polyps unfurled as it feeds using the eight tentacles surrounding each polyp's mouth. Coral polyps are many times beautiful on their own.

### EQUIPMENT

Sony 6300, Lens 18-55mm with Nauticam CMC-1 wet diopter 1/160 sec at f5.6, ISO 250, 1 x Inon D2000 strobe and 1 x Black Molly III (2600 lumens) video light.



**J**enny Stromvoll was born in Sweden and arrived in southern Mozambique in 2010. Here she met her future husband and dive buddy, Rupert Cornelius and began her adventures in exploring the world that lives beneath the waves of the east coast of Africa. These days she is the co-owner, with Rupert, of Back To Basics Adventures and takes clients diving to the reefs of Ponta do Ouro and Malongane Bay on a daily basis. While underwater she keeps an eye out for interesting and unusual animals and behaviours. Her passion is macro photography and she has documented critters previously not known to the area. At the moment, her time is dedicated to a sea slug guide of the Maputland Coast. Together with Georgina Jones, Jenny is showcasing 320 species of sea slugs found from St Lucia to Maputo. **SM**



## POINT OF VIEW

### LOCATION

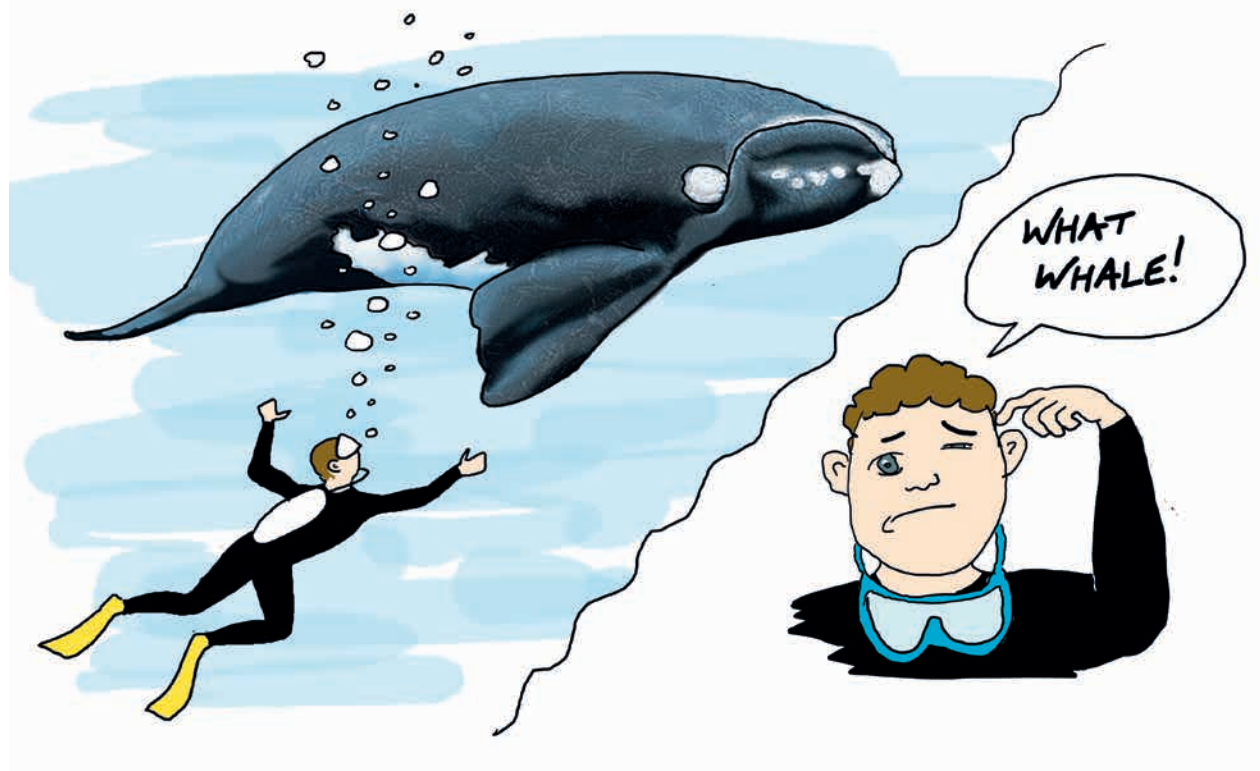
Atlantis reef (40m), Ponta do Ouro, Mozambique.

### DETAILS

This small species of amphipod is associated with our deeper reefs and commonly found on purple gorgonians. The amphipod is very tiny approx. 2-3mm in length and it is difficult to actually see them through your viewfinder.

### EQUIPMENT

Sony 6300, Lens 18-55mm with Nauticam CMC-1 wet diopter 1/160 sec at f5.6, ISO 250, 1 x Inon D2000 strobe and 1 x Black Molly III (2600 lumens) video light.



# FINDING DORY

By Carrie Pretorius

**I**t was a warm and sunny Sunday morning along the shores of False Bay in Cape Town. All the enthusiastic club divers had woken up early and were meeting at Whale Lookout, which was the local meeting spot for the weekly club dive. It was decided that shore conditions were average and a consensus had been reached that Windmill was the chosen dive spot for that particular morning. Windmill is known for little creatures like nudibranchs and other small critters, and a great spot for macro photography.

We kitted up, paired up with a dive buddy and made our way into the ocean. It was at least 15 minutes into the dive before I felt a tap on my shoulder and my dive buddy, Colin, pointed up towards the surface of the water. I looked up and saw what looked like a tail of a fairly large animal (it took a few moments to adjust my eyesight because I was looking closely on the ocean floor for tiny critters). The first thought that passed through my mind was that it was a great white

shark because there had been a few sightings in the area recently. After closer inspection, I saw that the shape of the tail was horizontal, depicting that of some sort of whale, and not vertical like a shark.

---

**I WAS STRUCK WITH SUCH AMAZEMENT AND AWE THAT THE MINUTES THAT FOLLOWED SEEMED SURREAL. THE SHADOW GREW LARGER AND LARGER AND SLOWLY CAME TO REST ON THE OCEAN FLOOR.**

---

A shadow then appeared behind the tail as the animal slowly started making a U-turn and began swimming towards the group of divers. I was struck with such amazement and awe that the minutes that followed seemed surreal. The shadow grew larger and larger and slowly came to rest on the ocean floor. There were about 10 divers all lined up in a row, kneeling on the ocean floor and watching


a spectacular show unfold before them. It was a 7m inquisitive juvenile southern right whale that came around to see what we were doing. After a few minutes, it let out a soft groan before making its way to the surface for a breath of air. As I looked up towards the sun, the whale's large body cast a shadow on us as it slowly began to descend again. The bubbles released from my regulator were literally hitting its large belly! I was worrying it might land on me but it stopped its descent and started swimming forward. We followed the whale for at least 10 minutes before it finally disappeared into the vast open ocean.

The divers swam back to shore and slowly exited the water. As we started talking amongst ourselves about one of the most amazing whale encounters a diver could ever experience, one of the divers at the back said, "What whale?" We all looked at him in disbelief and wondered how he managed to miss one of nature's greatest presentations! **SM**

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Image by Lindy Duffield.



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# DIVER LITE

## BOATING AND DIVER SAFETY

### QUESTION

What factors should be considered when sharing the water?

### CAUTION

Adhering to safe-boating guidelines is not enough to ensure diver safety

### DAN-SA

Make sure you know how to respond and whom to call in case of a collision



LOWER-BACK STRETCHES

# 5

### FREE-FLOWING FAILURE

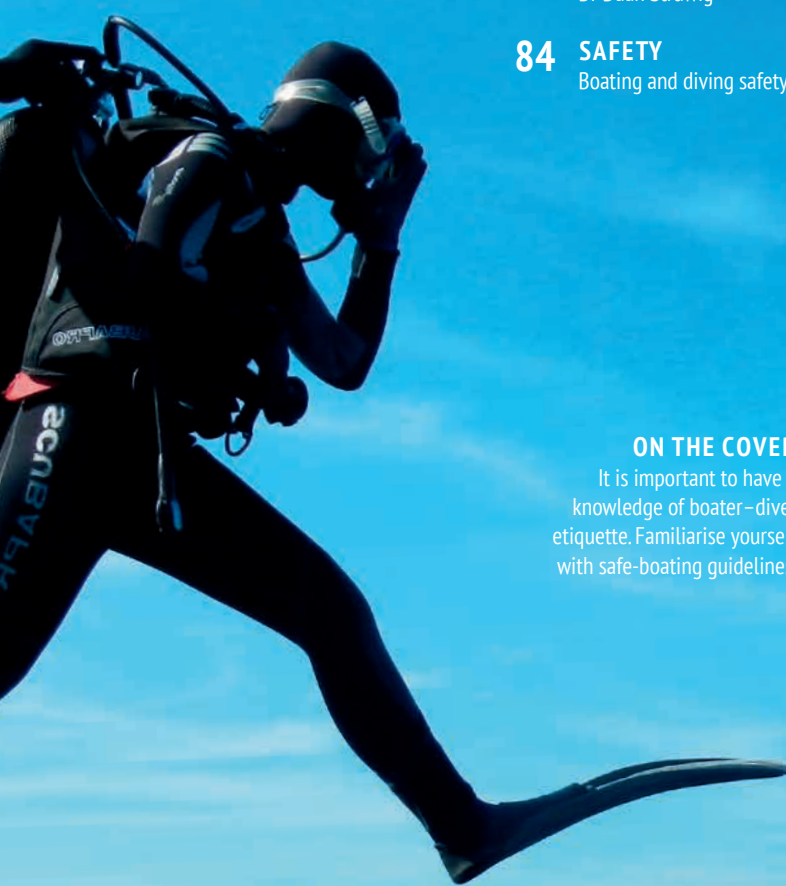
An uninspected second stage regulator

### IT IS A SIGN OF THE TIMES

Assessing basic vital signs

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## ON THE COVER

It is important to have a knowledge of boater-diver etiquette. Familiarise yourself with safe-boating guidelines.



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# PERSPECTIVES

Welcome to another edition of *Alert Diver Lite*.

This time we address basics, boats, boarding, blocks and bursts, backs, and boundaries. To see what all this is about, read on.

Most of us have heard of the KISS principle: "Keep It Simple, Stupid"

[1]. First appearing in print in 1960, KISS has held its ground against unintelligible complexity and technical intricacy. Emergency First Aid Assistance techniques have been 'KISS-ed' at regular intervals and rightly so! "Assessing Basic Vital Signs" is an excellent example of this. Please have a closer look.

We need them, but as helpful as they may be to divers, boats also come with bouncing, bobbing, bumping and blades: propeller blades! To avoid brass teeth, skippers and dippers need to follow the same rule book and do so all the time. We offer a summarised reminder of this from our "DAN Dive Slate on Boating Safety".

Next, please have a look at our Q & A section – especially Dr Neal Pollock's answer on "Flying after Pool Diving". Also, as a reminder, flying after diving, in general, is an important topic that is addressed more fully elsewhere by DAN [2]. For convenience, though, here is a summary of recommendations from the 2002 Workshop on Flying after Diving [3] applicable to typical recreational SCUBA divers [4]; intending to fly as passengers [5]; on commercial airlines [6]; after sea level diving [7];

- Single, no-decompression stop dives:  $\geq 12$  hours before flying
- Multiple dives and multiple days diving:  $\geq 18$  hours before flying
- Decompression-stop dives: 'substantially longer', but typically implemented in practice as  $\geq 24$  hours before flying [8]

Abrupt, unplanned loss of compressed air is an ever-present hazard while diving. Diver training includes an appropriate response to these situations. The most likely causes should still be avoided, however, including equipment malfunctioning (such as a 'sticking regulator') and pressure breaches (such as regulator hose rupture). Equipment choices, maintenance, servicing and obtaining the right replacement parts are all necessary precautions. For a real-life story on why, please read "Free-Flowing Failure".

Getting back in shape also involves shaping our backs. Please see Jessica Adams' section on "Preventing Backpain".

DAN offers real-time diving medical advice and assistance – both routinely and in emergencies. Contact our 24/7/365 DAN Hotline – for diving emergencies or medical queries:

0800 020 111 TOLL FREE from INSIDE South Africa or  
+27 828 10 60 10 from OUTSIDE South Africa

DAN also develops and runs various diver-safety campaigns and initiatives <http://www.dansa.org>

DAN develops and provides emergency response- and various risk-lowering training programmes; innovates tools to advance diving safety; and conducts focused research (in which all divers, including non-members, can participate if they would like to) to shape current and future policies, recommendations and personal diving safety choices. DAN is involved actively in a continuous dialogue with Members and non-members. In short:

DAN offers leadership through service to the diving public – you! We love communication! So, please feel free to 'call', 'like', 'tweet', 'follow' and 'chat'! DAN Membership, Safety, Training and Research Info Line:

0860 242 242 (Sharecall in SA)

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We trust you will enjoy this edition! Until next time – safe diving!

*Dr Frans J. Cronje, MBChB, MSc  
Founder of DAN Southern Africa*

[Editor's Note: In February, this year, Dr Daan Struwig of Richard's Bay / KwaMbonambi / Empangeni passed away. Daan was one of the founding figures of diving- and occupational medicine in South Africa - <https://zululandobserver.co.za/165319/obituary-dr-daan-struwig/>. We would also like to invite those who knew him, to share brief messages of remembrance and appreciation with us: [danmedic@dansa.org](mailto:danmedic@dansa.org)]

## REFERENCES

- 1 This phrase first appeared in the Chicago Tribune in December 1960 with the announcement of a United States Navy programme: Project KISS – a deliberate effort in designing simpler, more reliable military gadgets and equipment. The Routledge Dictionary of Modern American Slang and Unconventional English, Tom Datzell, 2009, 1104 pages, p.595, webpage: <https://books.google.com/books?id=5F-YNZRv-VMC&pg=PA595> : notes U.S. Navy "Project KISS" of 1960, headed by [https://en.wikipedia.org/wiki/Rear\\_Admiral\\_Paul\\_D.\\_Stroop](https://en.wikipedia.org/wiki/Rear_Admiral_Paul_D._Stroop), [https://en.wikipedia.org/wiki/Chicago\\_Daily\\_Tribune](https://en.wikipedia.org/wiki/Chicago_Daily_Tribune), p.43, 4 December 1960.
- 2 [https://www.diversalernetnetwork.org/medical/faq/Flying\\_After\\_Diving](https://www.diversalernetnetwork.org/medical/faq/Flying_After_Diving)
- 3 [https://www.diversalernetnetwork.org/files/FADWkshpBook\\_web.pdf](https://www.diversalernetnetwork.org/files/FADWkshpBook_web.pdf)
- 4 Guidelines for commercial- and technical divers require special considerations. Typical recreational compressed air SCUBA diving is less than 40 meters sea water.
- 5 Regulations and guidelines for pilots and air crew members may differ from those applicable to regular passengers due to operational considerations and the potentially wider range (drop) of altitude exposures involved. [https://www.icao.int/publications/Documents/8984\\_cons\\_en.pdf](https://www.icao.int/publications/Documents/8984_cons_en.pdf)
- 6 This implies that the cabin pressure does not drop more than 30% below sea level atmospheric pressure, i.e. no less than 0.7 atmospheres absolute or 690 mbar.
- 7 Note that diving at altitude can affect decompression safety significantly. However, flying from altitude (taking off at altitudes above sea level) after diving at altitude means that the additional drop in pressure in the aircraft at 8000 feet will be relatively smaller (i.e., less than the maximum anticipated  $\pm 30\%$  drop) as might be the case when taking off at sea level, and climbing to a cabin pressure at 8000 feet altitude. For purpose of illustration: Taking off from Johannesburg (which is physically located at 5525 feet above sea level), after diving in a nearby quarry, only involves a further 2475 feet climb to an atmospheric pressure equivalent of 8000 feet in the aircraft cabin. Conversely, if the dive and take-off were at sea level (0 feet altitude), then the climb (i.e., the drop in the cabin pressure experienced by the passengers) could involve a full 8000 foot drop in pressure.
- 8 The recommendation – 'substantially longer' is vague because the flying after diving research cannot account for all the possibilities of e.g., extended decompression stop diving.



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# A Free-Flowing Failure

By Peter Buzzacott, MPH, Ph.D.

## THE DIVER

The diver was a 24-year-old woman who was first certified to dive the previous year. She was 1.52 m tall, weighed 63 kg and had a body mass index (BMI) of 24. Since her certification, she had made a total of 50 dives, 30 of those during the preceding 12 months, and had dived to a maximum depth of 40 m.

## THE INCIDENT

The diver was part of a group that was visiting a local inland dive site. Soon after she entered the water, but before she descended, her octopus hose (alternate second-stage

hose) started flying around wildly, slapping the water and making a loud free-flowing sound. She did not initially know what was happening and attempted to grasp the hose. The diver's buddy turned off her tank valve, and the hose went limp. This all occurred in chest-deep water at the surface while the divers were putting on their fins before the dive. On close inspection, the diver discovered that the plastic octopus regulator had completely broken away from the hose. The regulator second stage fell to the bottom, and the hose was left in a free-flowing state. Thankfully no one was hurt, but the diver reported that the incident was a bit scary because it was so unexpected.



## ANALYSIS

The cause of this incident was a plastic second-stage or octopus regulator breaking away under pressure. In most regulators, the metal fitting at the end of the hose is attached to a metal part of the second stage that contains the valve that opens to provide air when the diver inhales. In this case, the attachment point was also plastic, and it gave way under the pressure in the hose.

This diver and her companions are lucky no one was harmed. It was also fortunate the regulator did not detach itself underwater while the diver was at depth. Experiments have shown that a cylinder will empty far more quickly if a low-pressure hose (regulator or inflator hose) bursts than if a high-pressure hose (pressure-gauge hose) bursts. This is because the low-pressure hose has a much larger hole for the air to pass through where it screws into the first-stage regulator. The difference can be as substantial as the cylinder emptying in less than one minute when a low-pressure hose bursts, compared with taking more than 10 minutes if a high-pressure hose bursts. All divers should regularly inspect their hoses for wear and tear, especially every time regulators are rented or borrowed.

In this incident, however, the hose was not the component that failed under pressure – it was the second stage regulator (though the net effect was the same as if the low-pressure hose had burst). In speaking with scuba equipment experts, DAN Research discovered that this particular type of second-stage regulator had not been manufactured for many years. This could be a clue as to why it failed on this occasion. DAN located a similar second stage to the one this diver was using, and under a magnifying glass, microcracks could clearly be seen on the port to which the low-pressure hose attaches.

## CONCLUSION

It seems the diver was using an older second stage as her octopus, and despite regular servicing, the plastic had started to deteriorate – microcracks may have formed where the hose attached. These can be hard to spot without meticulous inspection. Because this incident highlights a potential point of failure, and because that failure can empty a cylinder in less than a minute, regardless of depth, DAN urges all divers with older second stages to have them inspected for microcracks in the plastic.

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### **DAN urges all divers with older second stages to have them inspected for microcracks in the plastic.**

Fortunately, no one was injured during this disturbing incident; the octopus and hose were swapped out, and the divers went on diving. Also, thankfully, the diver's buddy was wearing a video camera on his head at the time and captured the whole event. All of the divers involved gave permission for this video clip to be posted on the DAN website in the Incident Reports section at [DAN.org/incidents](http://DAN.org/incidents).

We thank the diver for sharing this significant incident. This may well prevent it from happening to another diver. We encourage any diver who experiences an unplanned event during a dive to file a dive incident report through the DAN website. 🚩

# Tribute to Dr Daan Struwig

BY DR FRANS J. CRONJÉ

I have always enjoyed history: for its perspectives and prompts. The history of diving is very rich in this way. Here is a recent entry, with particular significance: On 14 February this year, Dr Daan Struwig of Richards Bay / KwaMbonambi / Empangeni passed away unexpectedly - <https://zululandobserver.co.za/165319/obituary-dr-daan-struwig/>

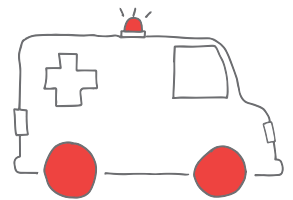
Daan was one of the founding figures of diving- and occupational medicine in South Africa. He was a doctor who would answer his phone, during a cinema movie, to make sure he could help immediately. To my amazement, nobody in the audience would object. I only know this because he *spoke to me* over the phone on just such an occasion. Everyone knew who Daan was and why he would do so. We would like to recognise this. So, in preparing this edition of *Alert Diver Lite*, our DAN Team thought it fitting to include Daan: Not in sadness, but in gratitude, and appreciation of him: as an encouragement to us all. We also offer an invitation to our readers to share memories of Daan's dedication [danmedic@dansa.org](mailto:danmedic@dansa.org): Here is mine:

It was the first time I met Daan – along the journey to DAN. It goes back to Sodwana Bay, 1991 – 27 years ago. I was still in the last throes of medical training. Medical Rescue International, under the DivEvac programme at the time, had offered me the opportunity to spend two weeks at Sodwana as a sort-of 'stand-in' medic. It was winter, mid-week, and there were only a handful of visitors. Some of the locals took pity on me, so they invited me to join them on a 24 m dive. I confirmed permission with MRI Ops. They said 'yes'; and I was off like a sprinter responding to a starting pistol! Had I known...: Anyway, in short, my designated dive buddy became my first DCI case. It was not just any case. He developed very serious, but fortunately quite rare, combined cerebral arterial gas embolism and spinal cord decompression sickness (also called Type III DCS). The eventual outcome was good, but it was one of my 'deepest' learning curves: From witnessing in-water difficulties; to providing in-water resuscitation; to ABCs on the dive boat; to moving the patient to the resident MRI Response vehicle (with me as its medic / driver); to the transfer to the dispatched MRI-DiveEvac helicopter from Richards Bay; to the Port Net Recompression Chamber; all of this was very, very personal. But, here is the main point of this story: In response to my own, first, diving emergency phone call – also as an injured diver's dive buddy – came the help, assistance, support, skill and assurance of Dr Daan Struwig. He truly inspired what was to become DAN Southern Africa, five years later, and now going for 22 years. We are very grateful for this!

We remember Daan's example: In a word – dedication. 🇳🇿



DAN-SA HOTLINE



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In a diving emergency, call:

0800 020 111 (local)

+27 828 10 60 10 (int.)

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# Public Safety Announcement: Boating and Diver Safety

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By the DAN staff



Whether we dive in a lake, from the shore or in open water, we often share the water with boats, jet skis and other watercraft. It is important to have a healthy respect for and knowledge of boater-diver etiquette, especially during the summer months and in areas with heavy boat traffic. Familiarise yourself with these safe-boating guidelines, and share them with friends who spend time on or in the water.



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challenging; be able to provide first aid; establish clear communication with divers and swimmers, and ensure the engine is off before allowing any boarding or disembarking.

### DIVERS

Boaters cannot keep their distance unless they know where divers are; it is therefore incumbent upon divers to appropriately use their diver-down or alpha flag. Once a flag is in place, make sure to stay within 90 m of it while diving in open water or within 30 m in rivers, inlets or navigation channels. Try to surface as close to your flag as possible.

Beyond using appropriate signalling devices, you should take additional steps to enhance your safety in the water. Strive to remain visible, adhere to local laws and establish clear communication with boat operators. Be vigilant: Scan for boat traffic during your safety stop, create an emergency action plan, and remain clear of propellers at all times – even if they are disengaged.

### SIGNALING DEVICES

For dive flags to be most effective, they should be stiff, unfurled and in recognisable condition. The most commonly used dive flag is the diver down, which should always be flown from a vessel or buoy when divers are in the water. The internationally recognised alpha flag indicates that other vessels should yield the right of way.

Surface marker buoys are also common and are typically deployed during a diver's ascent. Divers may also choose to use an audible signal (such as a whistle), a dive light or a signalling mirror to notify boaters of their location.

### ACTION PLANS

Because regulations vary according to place and vessel type, your action plan should accommodate local regulations and access to emergency services. Make sure you know how to respond and whom to call in case of a collision. To treat a laceration wound, stem blood loss by applying direct pressure and bandages, and get the injured person to medical services as quickly as possible. 🚑

### BOATERS

To avoid injuring or killing divers with vessel strikes or propellers, boat drivers must be vigilant about maintaining a safe distance from dive flags. In open water, a safe distance is at least 90 m from the flag; in rivers, inlets or navigation channels, that distance should be at least 30 m.

Just adhering to these guidelines is not enough to ensure diver safety. It is also important for boaters to continually look for people in the water; realise that glare, waves and other factors can make seeing divers

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# It's a sign of the times

## Assessing basic vital signs

By the DAN Medical Staff

Assessing vital signs (vitals) is a key component of good first aid. It consists of taking a series of simple measurements that provide data about a body's functioning. These measurements can help reveal how sick or hurt a patient is and, when taken over time, whether he or she is getting better or worse. While the full meaning of these measurements might elude the lay provider, a carefully documented series of vitals can be very helpful to the healthcare professionals who will eventually take over the care of an injured person.



**V**ital signs can be helpful even to first aid providers with limited medical training. Sets of vitals that are outside normal ranges typically indicate the need for some treatment or possible evacuation to a higher level of care. As an example, anxiety, elevated heart rate, elevated respiratory rate and pale, cool, clammy skin may indicate shock, a potentially life-threatening medical condition. Shock is relatively easy to address, but it can go unnoticed if vitals are not monitored. Vital signs that move increasingly further from their normal range over time may indicate an even more urgent need for evacuation.

### TIME

Thorough documentation of vital signs allows caregivers to observe trends, and is helpful when making treatment decisions.

To organise and keep track of your measurements, it is very important to document the time of day, along with each set of vital signs. This allows you (or a subsequent caregiver) to make comparisons between sets of vitals and observe trends in the patient's condition. The frequency with which vitals are taken depends on the patient's condition. Seriously injured or ill patients should have their vital signs reassessed every few minutes, while hourly checks are reasonable for those who are stable.

### LEVEL OF RESPONSIVENESS

An injured person's mental status or level of responsiveness is probably the most important vital sign. Since the brain has top priority in the body's distribution of resources, a decline in its status is especially important to recognise. To assess a patient's level of responsiveness, begin talking to the person. If the person can respond to you, ask him the following questions:

- What is your name?
- Where are we?
- What time is it (approximately)?
- What happened?

Answers to these four questions allow you to gauge a patient's orientation to person, place, time and event. If the patient can answer all four appropriately, he would be considered "alert and oriented to person, place, time and event" or, more commonly, A+Ox4 (read "A and O by four"). In addition to quantifying the patient's level of responsiveness, it is also helpful to write down a qualifying term. Helpful qualifiers include: "irritable", "anxious" or "combative". Words like these help round out your description of the patient's mental status.

If an injured person is awake and can respond to you but does not know the answers to any of these questions, that person can be considered alert but disoriented. A

common method of documenting a person's mental status involves using the AVPU scale. AVPU is an acronym that stands for alert, verbal, painful and unresponsive. The paragraph above describes patients who have an A rating on this scale, but sometimes ill or injured people are not alert.

### If the person does not respond when you attempt to engage them in conversation, talk louder.

If the person does not respond when you attempt to engage them in conversation, talk louder. In a loud voice, ask if they are OK. If the person responds to this elevation in volume, they can be considered responsive to verbal stimulation or V on the AVPU scale. The person does not have to respond verbally to be considered V; they may simply grimace or open their eyes, but any response to sound means they are V. If the person does not respond to your verbal stimulus, you should assess their responsiveness to pain. It is important not to cause harm, but simply elicit a response. A good way to do this is to pinch the skin over the patient's triceps, just above the elbow. If this causes the patient to respond, by moving or groaning for example, the patient is a P on the AVPU scale. Finally, a patient who does not respond to verbal or painful stimulation is considered unresponsive, or U on the AVPU scale.



## PULSE

A strong heartbeat is required to ensure an adequate supply of oxygenated blood to the body's tissues. To assess the pulse in an unconscious person (V, P or U on the AVPU scale), use the carotid artery in the neck. Place two of your fingers gently on the patient's trachea and slide them laterally. Do not reach across the trachea (use the near side), and do not try to assess on both sides of the neck at once.

You should feel the pulse in the carotid artery right next to the trachea. In a conscious patient (A on the AVPU scale), it is best to find the radial pulse on the wrist; this is less invasive. To find the radial pulse, place two of your fingers where the base of the patient's thumb meets their wrist. The pulse will most likely be between that spot and the most prominent tendons of the wrist. If you are having difficulty finding the heart rate, you may be pressing too hard or not pressing hard enough. Once you locate the pulse, count the number of beats in 15 seconds. Multiply this number by four and you will have the patient's heart rate in beats per minute.

### **If you are having difficulty finding the heart rate, you may be pressing too hard or not pressing hard enough.**

In addition to the rate, it is important to document the rhythm and quality of the pulse. The rhythm will be either regular or irregular, and the quality will usually be described as strong or weak. Most healthy adults have a resting heart rate of between 60 and 100 beats per minute, regular and strong. People experience a natural elevation in their heart rate when performing exercise or in stressful situations. The heart beats faster to ensure sufficient

oxygenation of tissues, allowing the body to respond quickly in emergencies. A person's pulse may be elevated shortly after an emergency, but this should stabilise in people who are not seriously injured.

## RESPIRATION


Since the body can survive for only a few minutes without oxygen, it is important to check the function of the respiratory system. If a person knows you are trying to count their respirations, they will probably change their rate of breathing and skew your measurement. To get around this: Transition smoothly to counting respirations as soon as you are finished checking the pulse. Once you have counted the heart rate, shift your focus to the breathing. Leave your fingers on their wrist, but watch for his or her chest to rise. If you are unable to detect respirations by watching the chest, it might be helpful to watch the abdomen or the shoulders instead. Folds of the patient's clothing might also aid your observation of respirations.

Since respirations are less frequent than heartbeats, count respirations for 30 seconds, then double the number to achieve an accurate result. As with pulse, measuring the rhythm and quality of respirations is important. Rhythm will be either regular or irregular. Words like "unlaboured", "gasping", "wheezing" or "laboured" are used to describe the quality of respirations. An adult at rest typically breathes between 12 and 18 times per minute, regular and unlaboured.

## SKIN

Skin is the body's largest organ, and it can be an excellent window into the body's functioning. If the skin is pale, cool and clammy, this is a sign that the body's resources (i.e., blood) are being diverted to more vital organs. When assessing the skin, you should take note of three different characteristics: colour, temperature and moisture.

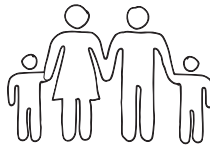
Skin colour, of course, varies widely among individuals, but there are non-pigmented areas of the body where all humans are pink. The most accessible of these places is the inside of the bottom lip. Take a look and note whether the colour is indeed pink or some other colour. It might be pale if the person is cold, blue if they are hypoxic, red if they are hot or even yellow if they are suffering from some illness. Temperature and moisture of the skin are best assessed on the abdomen as it is generally more consistent than using the hands or the face. The abdomen should be warm and dry, so if it is cool, cold, hot or moist, this is especially important to document.

Level of responsiveness, pulse, respirations and skin condition are by no means the only vital signs, but they are important and relatively easy to assess. The only equipment necessary to measure these is a watch, a pen and paper. Other vital signs include blood pressure, lung sounds, pupils and body temperature. Though training, experience or equipment may limit your ability to care for an injured buddy in a remote environment, assessing basic vitals is something just about anybody can do to help. 





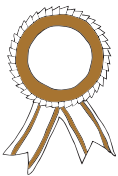
DAN-SA's mission is dive safety, from assisting divers in emergency situations to developing and implementing safety projects and programmes and furthering dive medicine and safety research.



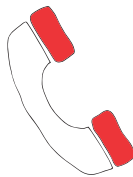
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# Medical Queries

## Flying after pool diving, beginner's nosebleeds, lung squeeze or IPE while freediving, reversing the effects of anticoagulants

By the DAN medical staff

**Q | I am a dive instructor, and I occasionally have student divers who wonder if they need to follow the flying-after-diving recommendations after just being in the pool.**

### ASK US ANYTHING

DAN-SA is here to answer all your medical questions. You can call the DAN-SA Hotline at 0800 020 111 toll free from inside South Africa or +27 828 10 60 10 from outside of South Africa. You can also email any questions to [danmedic@dansa.org](mailto:danmedic@dansa.org)

A | Flying or travel to altitude after diving is a consideration for many divers, so it is great that the question is being asked. Fortunately, a typical shallow, low-workload, pool-diving exposure would be of minimal concern, particularly when the time is split between the bottom and the surface, and the cumulative total underwater time is modest. This is a great opportunity, however, to reinforce an understanding of dive tables.

You can reference the *U.S. Navy Diving Manual* (USN 2008) for this guidance. An actual bottom time (the time from leaving the surface to the point of direct ascent to a stop depth or the surface) of 61-88 minutes at 15 fsw would

put a diver in repetitive group C. Group C is the maximum repetitive group allowed for immediate exposure to an altitude of 8,000 ft. A maximum depth of 10 fsw would require an actual bottom time of 102-158 minutes to put a diver in repetitive Group C.

Any delay between exiting the water and travel to altitude would provide an additional safety buffer as the diver off gases. Conversely, deeper dive depths, high underwater workloads and/or travel to higher altitudes would require greater conservatism.

Practically speaking, a 60-minute pool session in a 10- to 12-foot-deep pool (i.e., 3 to 4 meters deep) would offer little concern for typical pressurised aircraft cabin altitudes (usually 6,000-8,000 ft altitude equivalent) or unpressurised flight or driving to a similar actual altitude. Following the flying-after-diving guidelines recommended for recreational diving would not be necessary for this (or lesser) exposure.

For completeness, the flying-after-diving guidelines for recreational diving call for a minimum 12-hour surface interval (SI) after single no-decompression dives, an 18-hour SI after multiple dives per day or multiple consecutive days of diving, and a "substantially longer" than 18-hour SI after decompression dives (Sheffield and Vann 2004). The "substantially longer" text was used to acknowledge the fact that we did not have sufficient data for precise recommendations, but it is a common rule of thumb that a 24-hour SI is desirable for decompression dives.

The DAN® flying-after-diving guidelines are applied to the altitude range of 2,000-8,000 ft. Exposures to altitudes below this range are ignored, and exposures to greater altitudes are not recommended after diving until all excess inert gas is eliminated. In comparison, the U.S. Navy uses 1,000 ft as the threshold for altitude exposure. An interesting fact is that the U.S. Navy tables rely on most of the same data used to generate the DAN guidelines. The specific guidance for different exposure profiles is primarily based on mathematical manipulation of the same data, not additional experimental data.

Neal W. Pollock, Ph.D.

The diver reported "getting carried away while taking pictures. She stopped looking at her gauges and realised at 30 m that she only had 69 bar of breathing gas left."

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**Q | I have noticed that beginner scuba divers often get nosebleeds after dives. What causes them?**

A | Divers, especially new divers, sometimes report nosebleeds after diving primarily because they are unaware of the importance of equalising the sinuses and middle ears. The barotrauma that results when the sinuses are not equalised can cause blood vessels in the lining of the nose to burst. These vessels lie very close to the mucous membranes that line the nose and sinuses, and the blood can come from either of these linings. This type of barotrauma, generally the result of air being trapped within the sinuses, is not always painful, though the presence of blood can be disconcerting. With this type of injury, blood can also run down the back of the throat or pool in the sinus below the eye and emerge later. It can also act as a growth medium for bacteria and lead to sinus infections.

Individuals with a history of sinus trouble, allergies, a broken nose or a deviated septum as well as divers who currently have a cold may find equalisation difficult and may experience problems with nosebleeds. It is always best to not dive with a cold, congestion or any other condition that might block the sinus passages.

We suggest a slow, gentle descent with frequent equalising to help decrease the risk of sinus barotrauma. Divers who are unable to equalise their sinuses or have frequent nosebleeds when scuba diving should see their General Practitioner or a specialist in ear, nose and throat (ENT) care for evaluation.

*Dan Nord, EMT-P, CHT*

**Q | The Medical Line article in a previous issue of Alert Diver (Summer 2015) addressed the topic of the new generation of anticoagulant medications. It mentioned that there was no way to reverse the effects of these newer anticoagulants. I recently heard this is no longer true. Can you verify this?**

A | Indeed, a new medication called idarucizumab (Praxbind) can reverse the anticoagulant effects of dabigatran etexilate (Pradaxa). Reversal medications for other next-generation anticoagulants are still in development. Note that when traveling outside the U.S., however, idarucizumab may not be available in an emergency. This should prompt consideration when planning diving activities.

*Marty McCafferty, EMT-P, DMT*

**Q | Is there any reason cold water might increase the likelihood of lung squeeze while freediving? I have experienced lung squeeze a few times, but only in cold water (around 10°C). I was shallower than 30 m. In warm water I can reach 50 m, so I believe the squeeze is somehow related to the water temperature.**

A | You described your condition as lung squeeze, but it sounds like your question is really about what might have caused you to cough up blood from your lungs (presumably) under the conditions you describe. Given the variable impact of depth on the development of the condition, you could be experiencing a form of immersion pulmonary edema (IPE).

IPE is a multifactorial condition, largely a net effect of increased central blood volume, pressures within the chest and, for compressed-gas divers, increased breathing resistance. The squeeze is a primary component, but only part of the story. Immersion produces a shift in blood from the periphery to the core, and this effect can be magnified in cold water or partially replicated by wearing a tight wetsuit. Excessive fluid intake (hyperhydration) increases the risk. For compressed-gas divers, respiratory loading (most important, the effort to inhale) increases with water immersion, with breathing through a mouthpiece that adds resistance (particularly as gas density increases) and with exertion. Using compressed gas or freediving, if the net effect of the various stressors is a sufficient increase in the pulmonary artery pressure, capillary stress failure can produce a shift of blood into the lungs. Symptoms of IPE can include the perception of strain or stiffness in breathing, coughing and the coughing up of small amounts of blood.

While I cannot confirm that this is what you are experiencing, it may be that the central blood volume increase magnified by the cold water is the stressor that takes you over the edge that you skirt in warmer water exposures. IPE is most likely to appear when multiple predisposing factors are acting in concert. You may have found your own threshold.

I encourage you to consult with your medical monitors, keeping in mind that the classic squeeze is not the only risk that freedivers face.

*Neal W. Pollock, Ph.D.* 

# Catalogue

All orders can be placed through our new DAN Gear Shop at [www.danshop.co.za](http://www.danshop.co.za) or by contacting the DAN Shop on +27 63 917 8371/admin@danshop.co.za. All prices on the website include VAT at 15%. E&OE.



## DAN RASH VEST

With Rashies available in both red and white, this unisex rash vest made from Hight Stretch Lycra is a must-have for all divers. This vest is ideal for use under your wetsuit or for UV protection when in tropical locations. The DAN UV rash vest products have been tested and have all passed with a minimum UV50 factor. Using these products will decrease exposure to the sun's harmful rays and help protect against skin cancer. We still recommend using approved sun blocks for added protection while using our or any other brand's products.



## DAN GEAR MAT

With the red DAN logo on a white background, the DAN Gear Mat, made of woven polypropylene, is perfect for relaxing on the beach. You can also use it to put on your dive gear before a shore dive.



### FOX RESCUE EMERGENCY TOOL

The Rescue Emergency tool is created to cut materials such as fishing nets, ropes, parachute cords and even seat belts in case of an emergency. This Rescue Emergency tool is made of fibreglass with a stainless steel blade that is highly resistant to corrosion. It also has double-angle serration for underwater use.

The tool comes with a sheath that has a clip on the back which allows the tool to be attached to a diving jacket or weight belt, for example. There is also a hole in the front of the sheath to which a lanyard can be fastened or which can be used to permanently attach the knife to your diving equipment.

The total size of the tool, including the sheath, is 140mm.

### DAN SURFACE SIGNALLING KIT

New and improved! This kit includes a 1.9 m orange safety sausage (with a low-pressure attachment, dump valve and reflective strip), a Windstorm whistle, a signal mirror and a signalling torch. The accessories are incorporated into the sausage's base and the sausage clips to your BCD.



### DAN THERMAL RASH VEST

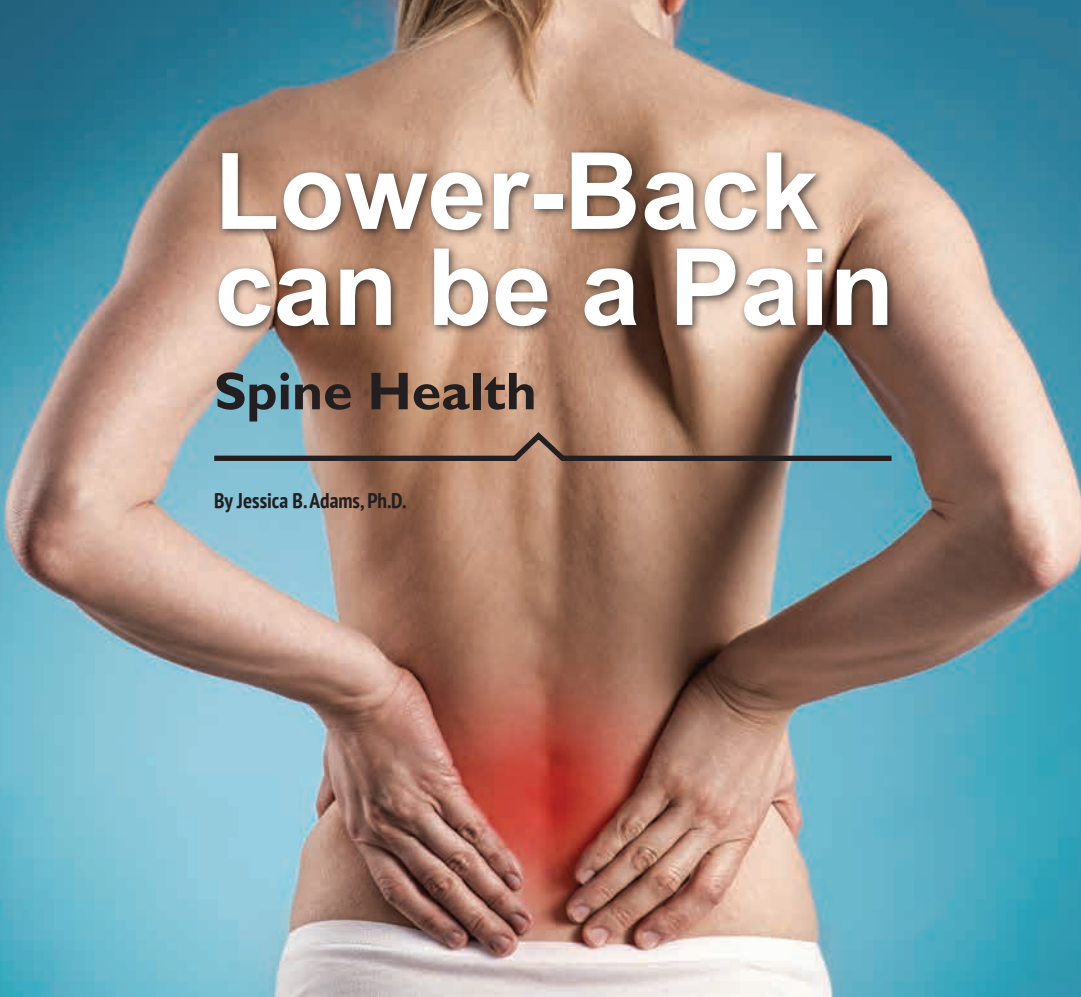
Available in black, this unisex rash vest made from Hight Stretch Lycra is fleece/fire skin lined and is great for cool water or for those who tend to get cold quickly. It is ideal for use under your wetsuit or for UV protection when in tropical locations. The DAN UV rash vest products have been tested and have all passed with a minimum UV50 factor. Using these products will decrease exposure to the sun's harmful rays and help protect against skin cancer. We still recommend using approved sunblocks for added protection while using our or any other brand's products. 🏴‍☠️



# Lower-Back can be a Pain

## Spine Health

By Jessica B. Adams, Ph.D.



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You have planned financially for your dive vacation. Is it not time to implement a health and fitness plan to ensure you feel your best and can make the most of your trip? Chronic back pain is a major health challenge that limits comfortable participation in many physical activities, such as scuba diving. Prevention is generally much more practical and effective than treatment. Regular exercise is a great way to free yourself from lower-back pain. Getting into the habit of doing exercises, such as the ones in this article, is a great way to promote a good spine health.



**T**hese stretches are frequently prescribed to people with lower-back pain for rehabilitation, but if you currently have lower-back pain, be sure to consult with your physician or physical therapist prior to doing these exercises.

Complete the following stretches five to 10 times. You can (and should) perform these exercises daily. One of the most important areas to stretch for prevention of lower-back pain is your hamstrings. Your hamstrings run down the backs of your legs from your sitting bones (*ischium*) to just below your knees, crossing both your hip and knee joints. Tight hamstrings place unnecessary pressure on your lower back, which can lead to pain and musculoskeletal imbalances.

### LYING HAMSTRING STRETCH

This stretch is done near a door or wall. The position places minimal stress on the lower back, allowing you to relax and move deeper into the stretch.

1. Lie on your back with one leg near the vertical surface
2. Place the opposite leg on the floor
3. Work the first leg up the wall toward a perpendicular stance and hold for 20-30 seconds
4. Lower the raised leg back toward the starting position
5. Slide your butt closer to the wall, and repeat on the opposite side, holding for 20-30 seconds

**Tip:** Remember to breathe while holding the stretch.





### SCISSOR HAMSTRING STRETCH

This stretch allows you to engage both hamstrings simultaneously.

1. Step your right foot in front of your left, about a foot apart
2. Place your hands on your hips
3. Keep your hips and shoulders facing forward (the hip of the leading leg will move forward so make a conscious effort to bring it back)
4. Keep your chest up and your head in a neutral position
5. Squeeze your shoulder blades together and down
6. Flex at your hips toward your front leg as far as you can without bending your knee
7. Hold for 20-30 seconds while breathing
8. Repeat on the opposite side

**Tip:** Keep both legs straight, but be careful not to hyperextend your knees. You can avoid locking your knee by maintaining an imperceptible bend in your front knee.



### BENT-KNEE SCISSOR HAMSTRING STRETCH

You will feel this stretch higher in the hamstring of your front leg.

1. Step your right foot further forward than in the last stretch
2. Place your hands on your hips
3. Bend your right knee
4. Make sure your weight is in your heel, not your toes
5. Keep your chest up and shoulder blades down and back
6. Flex forward, folding at your hips as far as you can
7. Hold for 20 seconds
8. Repeat on the opposite side

**Tip:** Be sure to have your front foot far enough forward to keep your knee behind your toes. You can hold onto a secure surface, such as a chair or wall, for balance.

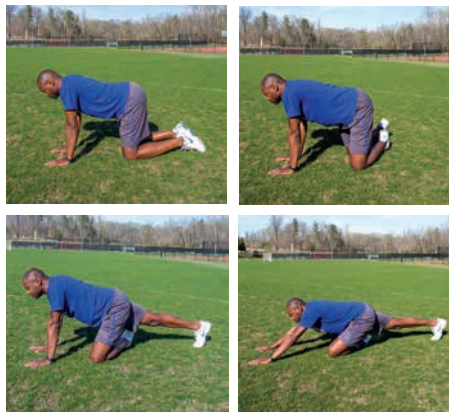


### PIRIFORMIS STRETCH

The piriformis muscle runs through the gluteal region. A tight piriformis can place pressure on the sciatic nerve, causing lower-back and leg pain. This stretch affects both the lower-back and piriformis muscles.

1. Lie on your back with your knees bent
2. Place your right ankle on your left thigh
3. Pull your left knee toward your left shoulder
4. Hold for 20 seconds, and repeat on the opposite side

**Tip:** Make sure you are pulling your knee to your shoulder on the same side. Try to resist the tendency of the knee to drift toward the center.



### DEEP PIRIFORMIS / HIP STRETCH

1. Start on your hands and knees with your hands under your shoulders and your knees under your hip
2. Keeping your knees in place, swing both ankles to the right
3. Extend your right leg and step it over your left
4. Move your hips backward, sliding your right foot back and bringing your right shoulder toward your left knee

**Tip:** Try to keep your left foot from falling behind you. 🚩

### DAN NOTE

To avoid an increased risk of decompression sickness, DAN recommends that divers avoid strenuous exercise for 24 hours after making a dive. During your annual physical exam or following any changes in your health status, consult your physician to ensure you have medical clearance to dive.

# Diving Doctor Directory

## **EASTERN CAPE**

### **Port Elizabeth**

P. Conradie • 041 583 2121  
A. Killian • 041 583 2121  
P.A. Schwartz • 041 363 1901

## **FREE STATE**

### **Welkom**

H.J.R. Colyn • 057 353 3191  
E. Kotze • 057 352 5905

### **Park West**

N.C. Theron • 051 444 1346

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P. de Jager • 012 362 1119  
B.H. Kloppers • 012 362 8828

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## **NORTHERN CAPE**

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## **WESTERN CAPE**

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G.S. Wolfaardt • 021 943 3500

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### **Cape Town**

A. Daya • 021 424 2003  
G.J. Greef • 021 424 2003  
G.M. Rosendorff • 021 424 2003  
L.A. de Kock • 021 424 2003

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### **Mossel Bay**

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### **Vredenburg**

W.H. Keuck • 022 713 5636

### **Waterfront**

M. Brauer • 021 419 1888

## **INTERNATIONAL**

### **Namibia**

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N.E. Marais • 00264 63 203 911



# LIGHTS, CAMERA, DIVE ACTION

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Photo by Geoff Spiby.

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**G2**

THE NEXT GALILEO HAS ARRIVED.

In 2007, SCUBAPRO's ground-breaking Galileo changed the world of dive computers forever. With previously unheard of power, memory, features and displays, together with a menu-based user-interface that made the smartest dive computer the easiest to use, Galileo set the benchmark that others have been chasing for a decade. Now, 10 years on, there's an all new Galileo that builds on the original's strengths but has been updated to include even more features, more personalisation, more power and more memory. Choose between the wrist-mount or all new console-style computer that features a cell phone style screen, rugged slim-line casing and a convenient quick-disconnect fitting.

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