

PNW DIVER

SPRING 2016

M A G A Z I N E

Featuring:

Mayzar Jalayer
Kent Forsén
Teresa Hedderich
Katie Morgan

and more...



01 About the Magazine

SPRING 2016 PNWDiver



©Mazyar Jalayer

Cover photo by Mazyar Jalayer

Nikon D800, NIKKOR 105mm f2.8 macro, +5 diopter, Aquatica housing, 1/320s, f22, ISO 100

The Pacific NorthWest Diver Magazine is published quarterly and is a publication of the Pacific Northwest Underwater Photographic Society (PNWUPS), which is an organization formed to encourage interest and participation in underwater photography. The organization's central goals are: to provide an environment where photographers can help other photographers improve their skill; to promote Pacific Northwest underwater photographers; and to share the beauty of our underwater environment with the non-diving public. If you have an idea for a story or would like to present an article for consideration, please contact the editor/publisher.



Editor/Publisher

Kerry Enns

Editors

Dale Carlisle

Dan Clements

Creative Consultant

Talia Cohen

Archive Consultant

Dale Carlisle

Washington Contact

Dan Clements

425.418.8755

Oregon Contact

Laura Tesler

BC Contact

Kerry Enns

604.807.7249

Mailing Addresses

In Canada:

34965 Seneca Court
Abbotsford, BC, V2S5N2

In United States:

1619 Edgemoor Lane
Everett, WA 98203

Membership is Free!

In order to subscribe to this e-publication, please complete the form on the Subscribe page on the website. E-mail addresses are not shared with other groups or businesses. We need an accurate count of subscribers to assist with sponsorships and travel.

This publication is free, and no advertising or trade-outs are accepted. This is made possible because of generous contributors willing to share their work without charge. Every effort is made to avoid errors, misspelling and omissions. If, however, an error comes to your attention, please accept our sincere apologies and kindly notify us.

No part of this publication may be used without written permission from the publisher. ©2016



Longhorn Decorator Crab in a Cloud Sponge ©Kent Forsén

Departments

- 04** From the Editor
- 05** Into the Archives:
Papa Flash
- 50** Your Lens. Your Story.
- 52** Travel Corner
- 54** This Issue's Contributors

©Mazyar Jalayer

Features

- 08** Mazyar Jalayer
- 16** Kent Forsén
- 24** Teresa Hedderich
- 32** Katie Morgan

©Kent Forsén

News & Technical

- 34** Pacific Adventures For Sale
- 36** Nik Collection Now Free
- 37** The Photographer's Buddy
- 39** Fluoro Photography
- 43** Printing on Aluminum
- 45** Video Part 6: Camera Moves
- 49** Back Button Focusing

©Tess Hedderich



Dearest Readers,

I look out my window and see the magnolia trees in bloom and the camellia in full flower with a carpet of pink petals on the lawns. Spring is early. And with Spring, it has become macro season. Our beautiful Emerald Sea is about to bloom. We are a die-hard group of people undeterred by questionable visibility. It's the time of year when we rejoice to see 20' away.

One of my dive buddies always sets a purpose to our dive. Last time it was who could find the coolest bottle. I found 2 bottles from the 60s and a medicine bottle. I won! That same dive we found a concrete pedestal, perhaps from a bird bath. I thought for a moment we had been transported to the Mediterranean Sea on an archaeological dive. An overturned boat sitting snugly on the bottom resulted in more silly antics. The entire dive was no deeper than 20 feet, but we had a great time, despite the less-than-stellar visibility (at times caused by ourselves). These are things that happen when we have the wrong lens for the job. We revert to childhood play. That's OK though.

So, go out and have some fun. Maybe lose the camera for a dive and play with a Lingcod or a Harbor Seal. Take the goodie bag out for a spin and have a contest of sorts. Try something new. I'm going to give side-mount a go. I'm also going to work at videoing while freediving. I'll let you know how it goes.

As always, if you have an experience that you'd like to share and some photos to go with it, send it my way and we'll see what we can do. After all, this magazine is about and for our readers of the Pacific Northwest.

Kerry Enns
editor@pnwups.com
www.celticcow.com

Papa Flash: Harold 'Doc' Edgerton and the Birth of Underwater Flash Photography

by Dale Carlisle

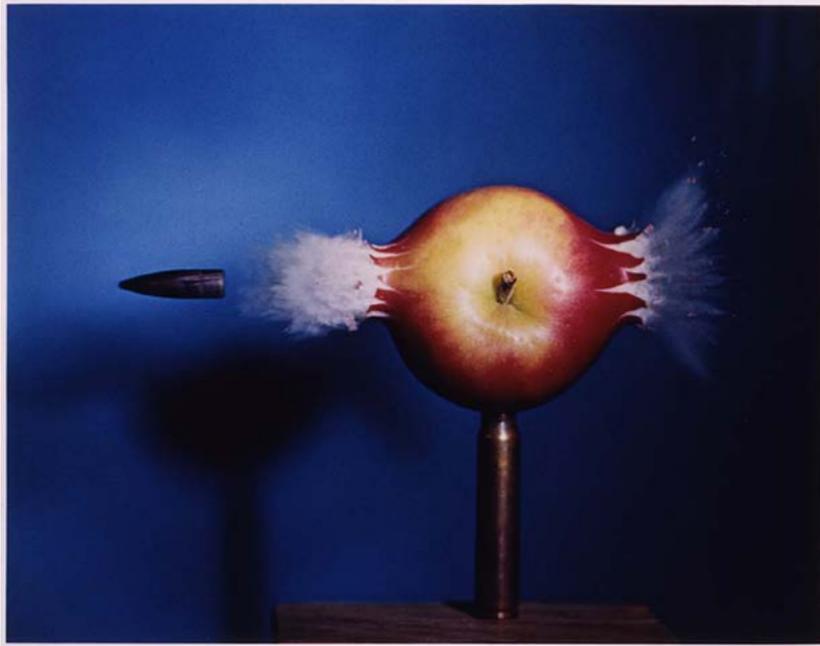


<http://anthonylukephotography.blogspot.ca/2012/09/photographer-profile-harold-edgerton.html>

Many divers may know that underwater photography was invented in the 1890's by Louis Boutan, but many may not know that much of what we do today, beyond the realm of ambient light, is credited to a tireless inventor called Harold Edgerton. He is known for inventing or utilizing the strobe and electronic flash, stop action high-speed photography, sonar equipment and robotic camera systems. His impressive contributions spanned decades and involved exploration work with oceanographic institutes on the Pacific and Atlantic coasts, the US Navy and Jacques-Yves Cousteau.

Harold Edgerton, or "Doc" as he was affectionately known by many, had a long and prolific career as an inventor and professor at the Massachusetts Institute of Technology (MIT). From youth he had a particular fascination for light, working as an Electrician and movie projectionist while going to University. During WWII, he helped the Allies in England develop a high powered search light to photograph enemy positions from the air.

While at MIT, Doc Edgerton developed a powerful strobe light called a stroboscopic flash for use to measure the rotation rate of motors. On the advice of a colleague he sought out other applications and happened upon photography. There he discovered his strobe could keep pace with the movement of fast moving subjects; far more



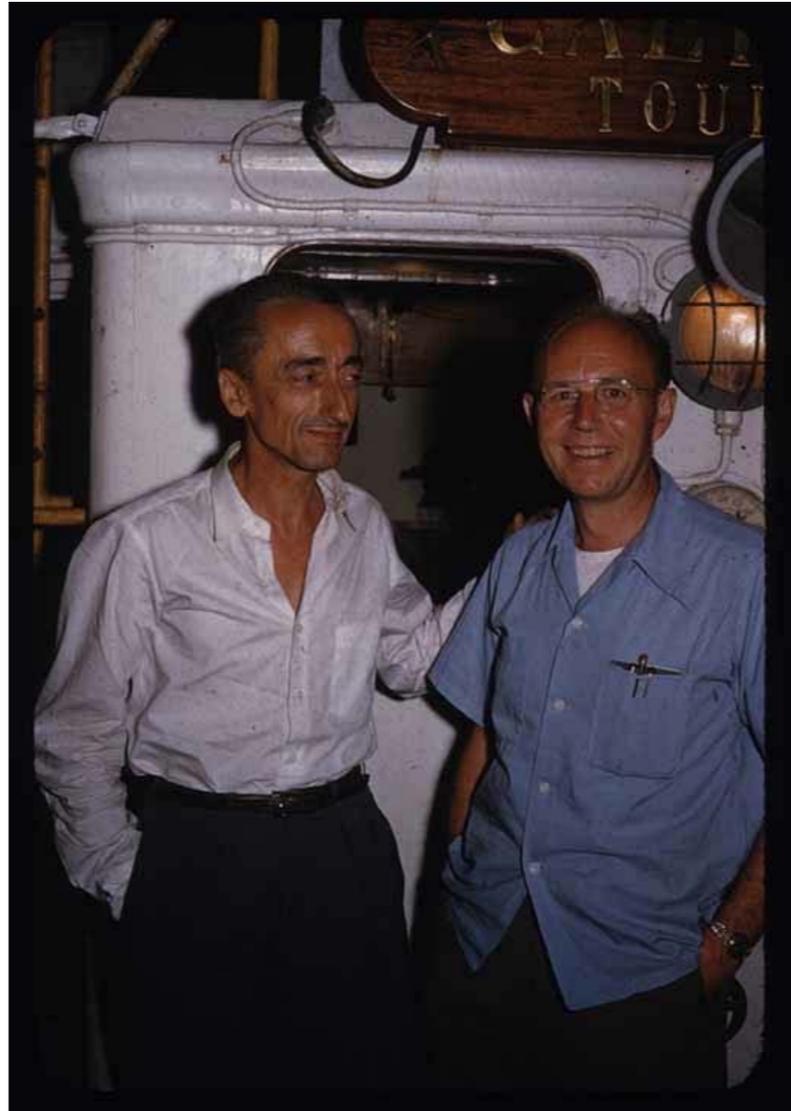
Bullet through Apple, 1964

<http://anthonylukephotography.blogspot.ca/2012/09/photographer-profile-harold-edgerton.html>

quickly in fact, than the rate of the camera's shutter. Thinking one step further, Doc switched to running continuous film and thus discovered stop action, high-speed photography. The world was intrigued by the imagery produced by this new form of photography and images of bullets piercing playing cards, bats catching insects and coronets of milk droplets became as popular in modern art galleries as works from more traditional mediums.

Doc Edgerton also developed underwater sonar, initially invented to seek out submarines during the war, to scan the sea floor for submerged archaeological artifacts. He was involved in expeditions to find the USS Monitor, sunken columns in Venice, lost Spanish gold and even for a time the Loch Ness Monster.

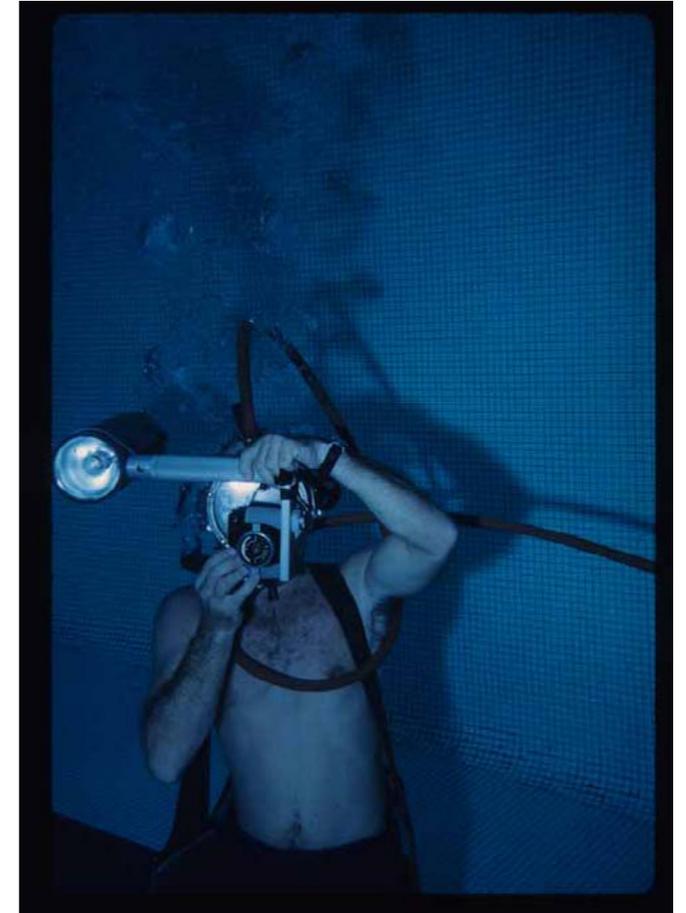
Underwater exploration fascinated Doc Edgerton from a practical point of view. He had an undaunting enthusiasm



Jacques-Yves Cousteau and H. E. Edgerton on the Calypso. © 2010 MIT. Courtesy of MIT Museum.

<http://oceans.mit.edu/news/featured-stories/papa-flash-mit-professor-brought-vision-underwater>

for solving technical problems and as a relatively new field, it afforded many challenges, or as he would say, opportunities for inventiveness. He became involved with Jacques-Yves Cousteau and the crew of the Calypso over the years helping them to develop and refine their movie making and photographic endeavors. In particular, he worked to develop robotic camera systems to allow taking imagery from towed cable arrays. These cameras were the forerunners of the modern day ROV.



H.E. Edgerton under water in a swimming pool, holding a camera and flash, likely at MIT. © 2010 MIT. Courtesy of MIT Museum. <http://oceans.mit.edu/news/featured-stories/papa-flash-mit-professor-brought-vision-underwater>

Nicknamed "Papa Flash" by the Calypso team, Doc Edgerton had already contributed sophisticated underwater cameras with an electronic flash that could be triggered miles below the surface by a timer. This timer was essential because, at those depths, there was no practical wiring for surface activation. The robotic camera was lowered at the end of a steel cable to what the crew hoped was the right depth and held there until the preset timer triggered the camera to take a series of images, however, more times than not, the lens became fouled by sediment from the bottom. The problem for the crew miles above was detecting where the bottom lay before the camera array crashed into it. Papa Flash went back to the laboratory and returned with a sonar unit



*Jacques-Yves Cousteau testing Harold 'Doc' Edgerton's underwater camera and flash in the MIT Pool, 1952.
<http://video.mit.edu/watch/jacques-yves-cousteau-testing-harold-doc-edgertons-camera-1952-3139/>*

he called 'the Pinger,' modeled after wartime sonar. This device would send sound waves out, or ping the bottom, and when it was at the correct depth from it, trigger the camera to activate.

As often happens in new fields, one solution often led to more questions than answers. Doc had provided the camera system that revealed a benthic sea floor full of signs of life but not the animals or organisms that made them. As JYC says in his book, *The Living Sea*:

"Papa Flash had built the most sophisticated depth camera in existence, and instead of giving us answers, it merely raised more questions about life in the dark reaches.

"Robotic oceanography is getting us nowhere," I said to him. He grinned. Edgerton is the sort who will

throw his life's work out of the window if he can envisage a better technique. We both knew what that better technique was: the unaided human eye plunged into the dark mystery."

The next challenge was to take man himself to the ocean floor, to see and record its life and Doc Edgerton was there to meet it. His camera systems, strobes, electronic flashes and sonar units were used by oceanographic, commercial and military groups. He contributed to many submersible programs including all of the famous Trieste dives probing the depths of the 39,000ft Challenger deep in the Pacific's Mariana Trench.

Ambitious until the end, with a zest for life, learning and encouraging others, Harold "Doc" Edgerton continued to

be active at MIT until late into his life and died in 1990 at the age of 86. Today, professional and recreational divers carry on the work started with those early explorers by continuing to photograph the underwater world and in almost all cases, use Papa Flash's light contributions to do so.

Sources:

The Living Sea. J. Cousteau & J. Dugan. 1963.

Harper & Row Publishing. New York.

The History of Underwater Exploration. Robert Marx. 1978.

Dover Publishing. New York.

Article: Unforgettable "Doc" Edgerton. Paul Gray. 1991.

The Reader's Digest Association. Illinois.

Images sourced in captions.

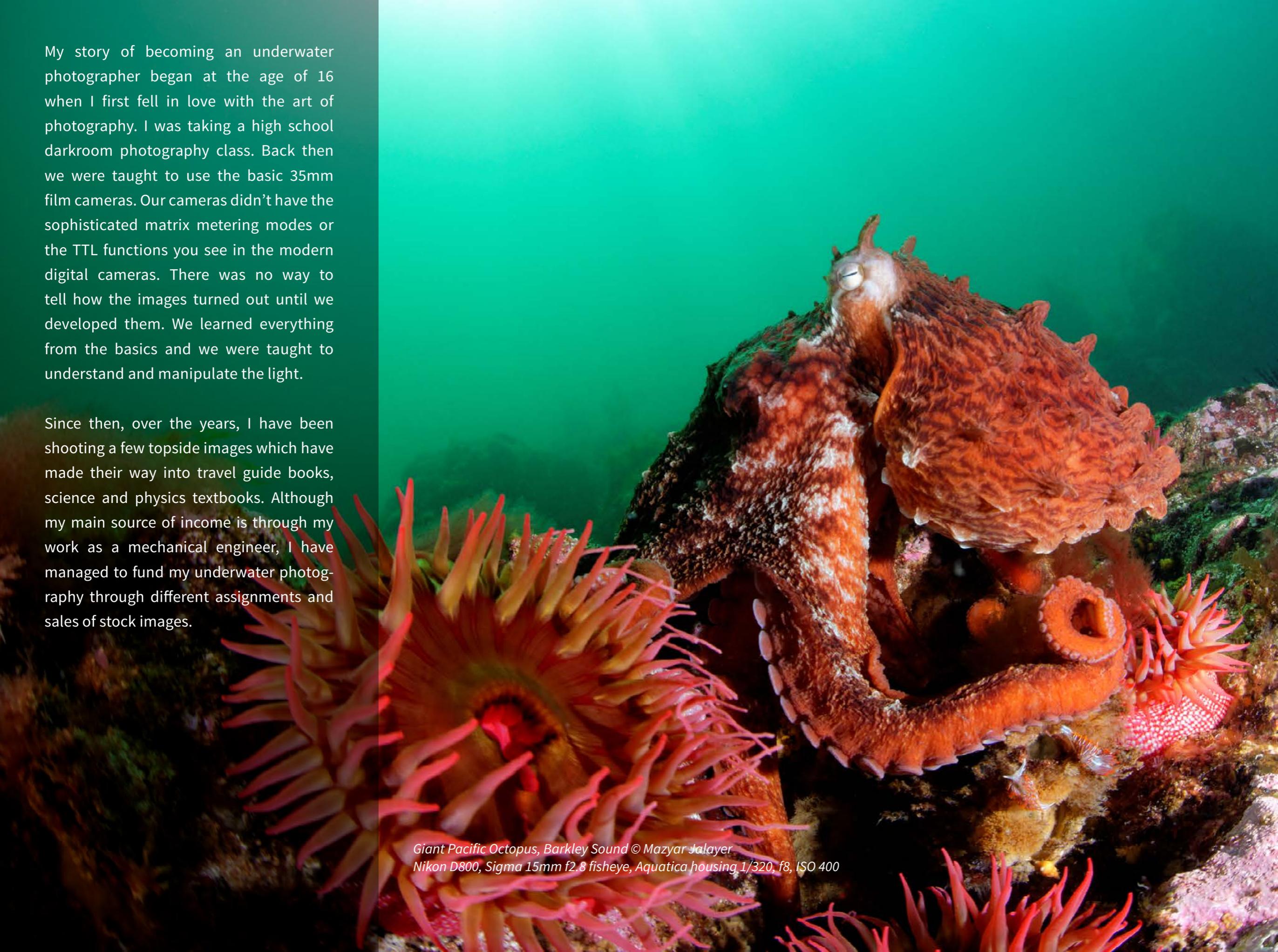
Featured Photographer: Mazyar Jalayer



*Pacific Red Octopus © Mazyar Jalayer
Nikon D800, NIKKOR 105mm f2.8 macro, Aquatica housing 1/320s, f16, ISO 100*

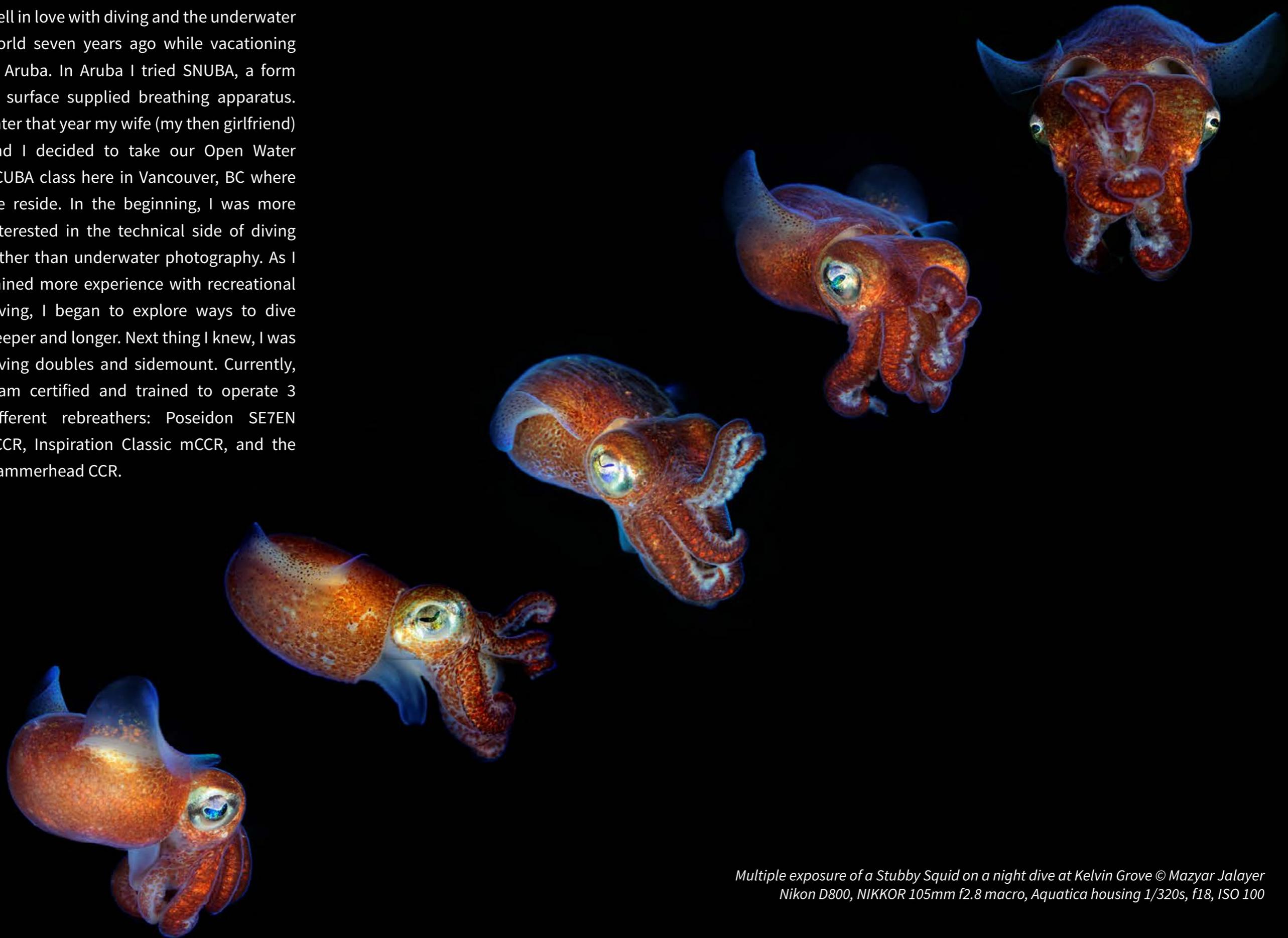
My story of becoming an underwater photographer began at the age of 16 when I first fell in love with the art of photography. I was taking a high school darkroom photography class. Back then we were taught to use the basic 35mm film cameras. Our cameras didn't have the sophisticated matrix metering modes or the TTL functions you see in the modern digital cameras. There was no way to tell how the images turned out until we developed them. We learned everything from the basics and we were taught to understand and manipulate the light.

Since then, over the years, I have been shooting a few topside images which have made their way into travel guide books, science and physics textbooks. Although my main source of income is through my work as a mechanical engineer, I have managed to fund my underwater photography through different assignments and sales of stock images.

A large, reddish-brown Giant Pacific Octopus is the central focus, resting on a rocky seabed. Its body is covered in intricate patterns and textures. Several of its tentacles are visible, some curled and others extended. The octopus is surrounded by vibrant red sea anemones with long, thin tentacles. The background is a clear, deep blue-green water, suggesting an underwater environment. The lighting is soft and even, highlighting the details of the octopus and the surrounding marine life.

*Giant Pacific Octopus, Barkley Sound © Mazyar Jalayer
Nikon D800, Sigma 15mm f2.8 fisheye, Aquatica housing 1/320, f8, ISO 400*

I fell in love with diving and the underwater world seven years ago while vacationing in Aruba. In Aruba I tried SNUBA, a form of surface supplied breathing apparatus. Later that year my wife (my then girlfriend) and I decided to take our Open Water SCUBA class here in Vancouver, BC where we reside. In the beginning, I was more interested in the technical side of diving rather than underwater photography. As I gained more experience with recreational diving, I began to explore ways to dive deeper and longer. Next thing I knew, I was diving doubles and sidemount. Currently, I am certified and trained to operate 3 different rebreathers: Poseidon SE7EN eCCR, Inspiration Classic mCCR, and the Hammerhead CCR.



*Multiple exposure of a Stubby Squid on a night dive at Kelvin Grove © Mazyar Jalayer
Nikon D800, NIKKOR 105mm f2.8 macro, Aquatica housing 1/320s, f18, ISO 100*



It was only a couple of years ago that I decided to place my Nikon F5 film camera inside an old Subal housing, that I found the joy of underwater photography. Since then I have found a new appreciation for the underwater world and I have been focusing my effort on producing images that can tell the story about this amazing environment.

Take away the water-tight housing and some of the issues associated with the reflective index of water versus air, underwater photography is just another form of photography. The same principles that apply to topside photography also apply underwater. One thing I have learned over the years as a photographer, and not just as an underwater photographer, is that there seems to be too many 'rules' for photography. We tend to forget photography is a form of art and not just a tool for documentation. There are rules and settings for taking a wide angle or macro images. These rules are great and they will help one take amazing technically sound images. However, it's impossible to create truly original work if one just follows these rules.

*A rare Spiny Lebbeid Shrimp © Mazyar Jalayer
Nikon D800, NIKKOR 105mm f2.8 macro, Aquatica housing 1/320s, f18, ISO 100*



To be successful you have to think outside the box and experiment. So don't be afraid to fail, try something new. Every time I go diving I don't have any expectations. I am not always successful but I am not afraid to fail. Finally, to be an excellent underwater photographer, I think one must also be a good photographer in general. I encourage those who are starting out to try other genres of photography such as portraiture, long exposure, multiple exposure, repeating flashes or even high-speed photography. All these different photographic genres can help in developing unique images underwater.

*Juvenile Wolf-eel taking shelter inside a clam shell © Mazyar Jalayer
Nikon D800, NIKKOR 105mm f2.8 macro, Aquatica housing 1/320s, f11, ISO 100*

I love shore diving in the Howe Sound area and I think I am one of the few that prefers cold water over warm water diving. Shore diving is great. It's free and there is no time limit. I can take my rebreather and do a 120min dive any time of the day. If I were to name my favorite dive site it would be Kelvin Grove. I love Kelvin Grove, it is always teeming with life.

For my underwater photography, I have three camera bodies: Nikon D800 full frame DSLR, Nikon D7200 crop sensor DSLR and an old Nikon F5 36mm film camera. I use Aquatica housings for my two digital cameras and an old Subal housing for my film camera. My D800 is my workhorse and the D7200 is my backup. My lenses for underwater are Nikon 16-35mm f4 VR rectilinear wide angle, my most favorite Sigma 15mm f2.8 fisheye, Tokina 10-17mm NH DX fisheye, Sigma 28mm f1.8 macro, Nikon 105mm f2.8 VR II macro, Nikon 60mm f2.8D macro and a custom designed macro lens capable of 2.5:1 magnification.

For wide angle, I use 8" acrylic dome and a 4" glass mini dome. For macro, I have a flat dome with manual focus knob and a 5+ diopter wet lens. For lighting, I use a pair of Sea & Sea YS-D1 and an iTouch Video Pro 4 as a focus light. I take my images in Lossless compressed RAW format and post process them using DxO Optics Pro running on a Windows based PC.

Contact Information:

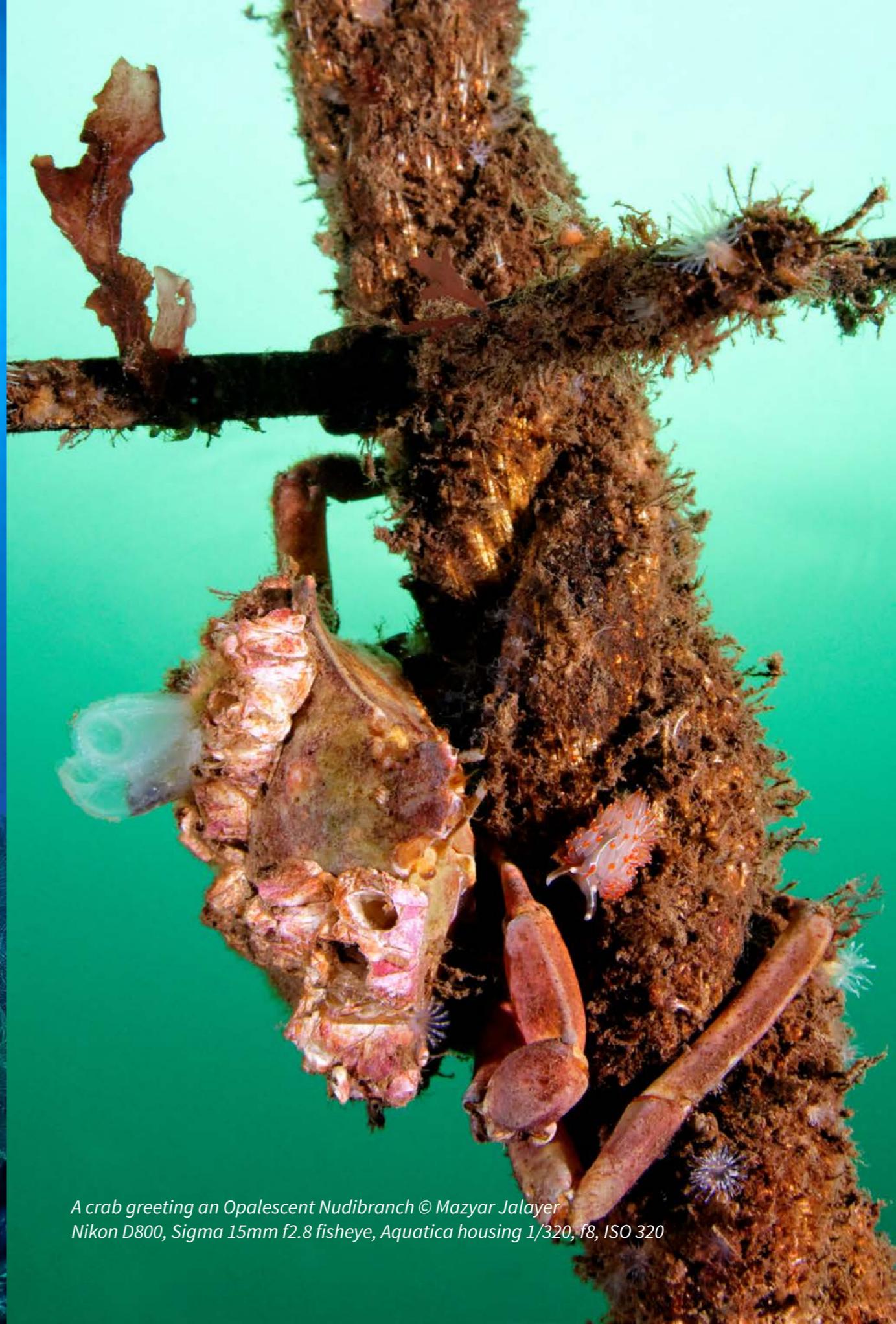
<http://www.mazimages.ca/contact/>

*Ahmed exploring the wreck of HMCS Saskatchewan © Mazyar Jalayer
Nikon D800, Sigma 15mm f2.8 fisheye, Aquatica housing 1/80, f8, ISO 800*





*Black hills dive site near Utila, Honduras © Mazyar Jalayer
Nikon D800, Sigma 15mm f2.8 fisheye, Aquatica housing 1/320, f22, ISO 50*



*A crab greeting an Opalescent Nudibranch © Mazyar Jalayer
Nikon D800, Sigma 15mm f2.8 fisheye, Aquatica housing 1/320, f8, ISO 320*



*Juvenile Mosshead Warbonnet hiding inside an Acorn Barnacle shell © Mazyar Jalayer
Nikon D800, NIKKOR 105mm f2.8 macro, +5 diopter, Aquatica housing 1/320s, f20, ISO 100*

Featured Photographer: Kent Forsén

by Andy Lamb



Quillback Rockfish ©Kent Forsén
Nikon D600, 60mm, f20, 1/60sec, ISO 200

I first met Kent Forsen during a 2002 cruise to the Haida Gwaii (Queen Charlotte Islands) aboard the Nautilus Explorer. Kent was leading a group of Swedish divers who were part of a group signed on with a Vancouver Aquarium collecting/education voyage. He was one of these keen underwater photographers particularly interested in marine life and I was one of the aquarium staff participants. A strong friendship was initiated and continues to this day.

Kent began his SCUBA diving vocation in 1957 when this sport in Sweden was just beginning, essentially with home-made and shared equipment. Eventually, at the end of the 1950s factory produced gear appeared via the Swedish Posiedon Industrial Company.

In 1964, Kent decided to try underwater photography and started with a Kodak Retinette 35 mm camera with a built in flash light and a plexiglass housing. The flash had a floating mercury switch that required the user to tilt the entire unit on its side to engage. Clumsy and inconsistent.

After a year of frustration, he moved to a Nikonos II with flashbulbs and soon added a Braun 260 strobe in a Plexiglas tube for extra light. Better but still less than satisfactory for Kent's ambitions.



*Puget Sound King Crab ©Kent Forsén
Hasselblad 500CM, 120 mm, f/11, 1/80 s, ISO 100*

A few years later and ready to seriously invest in quality equipment, Kent settled on a Hasselblad 500CW medium format camera in a Hasselblad housing with a Subatec 100Ws strobe. The associated lenses were a Zeiss Distagon 50 (wide angle) and a Zeiss Makro-Planer 120 (close up). As a last step in this process, a Hasselblad 503CM and a Super-Wide camera with Biogon 38 mm lens was selected.

This was the answer. Becoming more and more proficient over the next 30 years, he was able to capture thousands of quality images. Kent was completely satisfied – or so he thought.

Along came the digital revolution that transformed photography and almost totally eliminated film cameras. Adjusting to this new technology, Kent transitioned to a NikonD600 camera in a Seacam Silver housing with a Seaflash 150 digital strobe. To be equipped for virtually, he accumulated the following lenses: Nikon 60 mm, Sigma 150 mm, Nikon 17 – 35 mm wide angle.



*Wolfish in Greenland ©Kent Forsén
Hasselblad 500C, 50 mm, 1/60, f/5,6, 1/60 s, ISO 100*



After a long career as a Medical Information Manager, Kent is now retired and is able to spend more time pursuing his “quality of life” mantra with his bride (and current warm water only dive buddy) Brigitta. As one might guess, these two met through diving (1967) and were married in 1977. Of course underwater photography remains a priority. By contributing his photography to magazines and books, he is particularly interested in educating the general public about the underwater world and the continuing threats to its well-being. As an active member of the Swedish Society for Underwater Photography, Kent is regularly involved with the production, promotion and installation of major photographic exhibitions throughout the country.

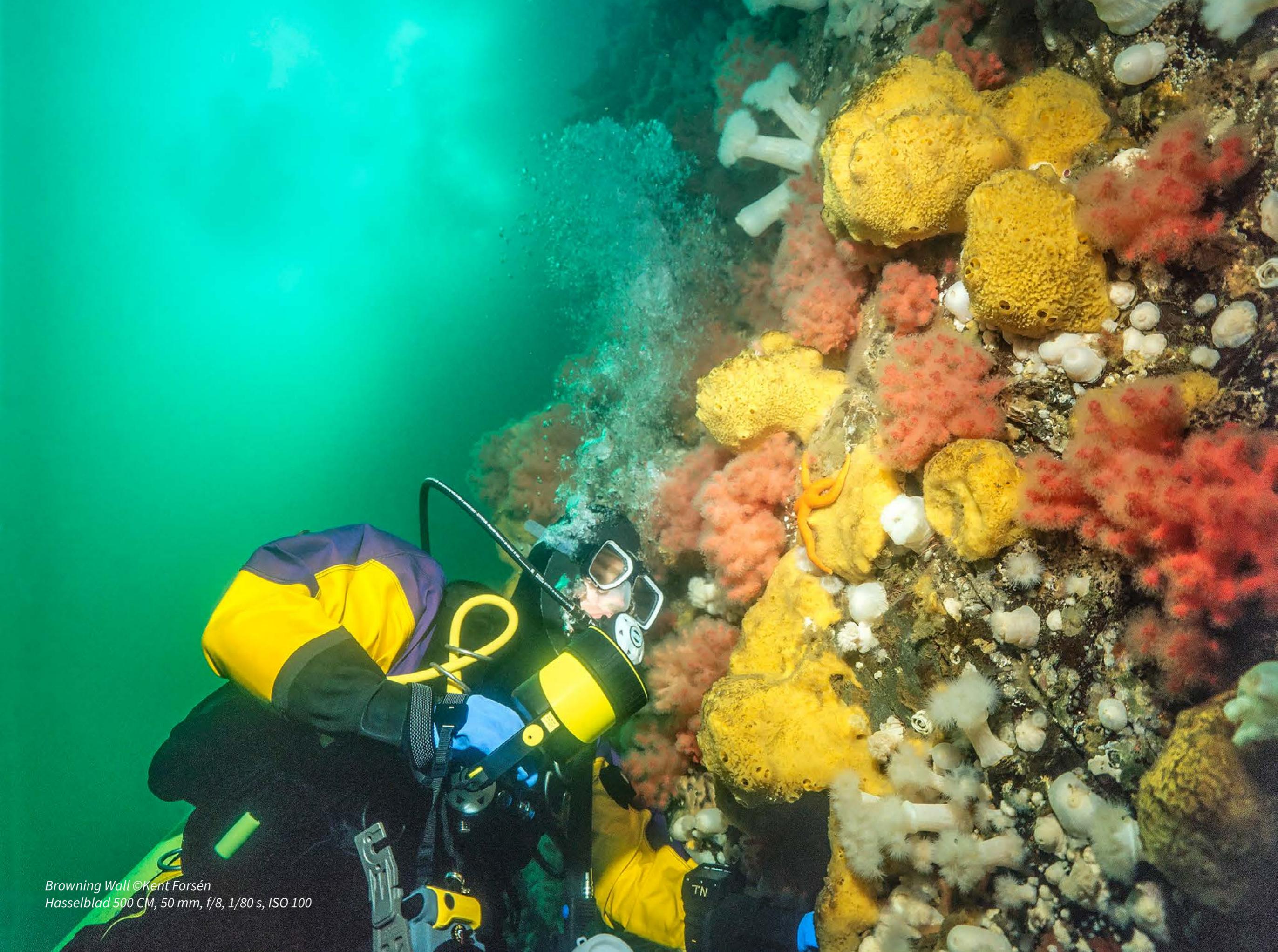


While dive travel opportunities have always been pursued, recent retirement provides more opportunity. Outfitted and comfortable with the equipment required for the cold water diving of Sweden, the Forsens easily adapted to diving in Norway, Ireland, Greenland, California and British Columbia. But like most SCUBA aficionados, they also revel in the joys of tropical destinations and have spent considerable time underwater in Egypt, Sudan, Eritrea, Yemen and Indonesia. As of the appearance of this article, Kent has just returned from an intensive photographic excursion to the famous Lembeh Strait.

A health conscious seventy three year old in excellent physical condition, Kent anticipates years of additional travel particularly to this part of the world. Browning Pass, Egmont, Discovery Passage and Barkley Sound are but a few of his favorite Pacific Northwest locales. Indeed, a ten day adventure to Barkley Sound, via Rendezvous Dive Adventures is booked for September 2017. His trigger finger is itching already.



*Vermilion Rockfish ©Kent Forsén
Nikon D200, 60mm, f/16, 1/60 sec, ISO100*



Browning Wall ©Kent Forsén
Hasselblad 500 CM, 50 mm, f/8, 1/80 s, ISO 100



*Nudibranch ©Kent Forsén
Nikon D600, 150 mm, f/16, 1/80 s, ISO 200*

Featured Photographer: Teresa Hedderich



Frosted Nudibranch ©Teresa Hedderich
Canon Powershot G16, 6.1mm, f6.3, 1/30sec

Although I was born and raised in Munich, Germany, I need to say that I really enjoy what Canada has to offer and love the underwater world of the Pacific Northwest. For the past 4 years, I lived in Vancouver and enjoyed every bit of it. I am in Bali, Indonesia right now and will be here for the summer season teaching SCUBA. I plan to be back in Canada for the winter.

I was always interested in underwater photography but did not start until I had quite a few dives. It is an expensive yet addictive hobby. Since I am a SCUBA instructor, I still enjoy dives without my camera, but on my fun dives, the camera is right there by my side. I am easily excited by underwater creatures and have developed a good eye for spotting what I am looking for. I remember back in the day when I was proud of finding a Lumpsucker but had no proof of it. Paul, one of my mentors, said that no photo of it meant it didn't happen. This bugged me so much that from then on I made sure to have something to show off. Chelsea, my other mentor, guided me in my first steps into underwater photography, helped me figure out what I needed, what brands to look for, and how to put it all together.



*Mosshead Warbonnet ©Teresa Hedderich
Canon Powershot G16, 14.7mm, f2.5, 1/160sec*

Initially a tropical diver, I would have never thought I would love drysuit diving so much, in fact, I said I would never do it. Even when I bought my first dive computer, my instructor told me to not cut the band in case I want to use it with a drysuit. Without even wasting a thought, I cut it. Then when I started drysuit diving, I could still make it work to fit – barely. I have never had a dive in BC waters where I felt bored. This wasn't always the case in the tropics, though, and that's how I knew my heart transitioned all the way to cold water diving.

In the Vancouver area, which for me is such a paradise, my favourite dive site is Kelvin Grove and most of my pictures are taken there. Most of my fun and night dives are at this location. I love Vancouver Island diving very much, though, and have enjoyed many dives up in Campbell River and Port McNeill.





In general, I think every professional or amateur photographer looks back at their pictures and might feel embarrassed about their first shots. When I look back, though, I am encouraged by the progress I have made and it has helped to get a better idea on how to change things. It has also improved my eye for the right angle. I need patience to get a sharp shot and my experience told me it is all about practice. I still have a bad picture day once in a while and that is ok.



My camera equipment has changed once already even though I am still capturing with a point and shoot. I would love to get a housing for my DSLR camera, but that will take time. I started off using a second-hand Canon S95 with an Ikelite housing. It was a great camera to gain experience. Soon after, I upgraded my set-up to a Canon G16 with Fantasea housing, Ikelite DSttl 51 strobe, Sola Photo 600, tray with two arms. I mostly shoot in macro mode, so, for this reason, I added a Macro SharpEye lens to gear. For me, Macro is easy and I love it, but also boring too, sometimes. The real challenge for me starts at wide angle photography, especially in our dark BC waters.

I used to go nuts when editing in Lightroom but then I was looking at my pictures later and discovered that they looked pretty unreal. I stopped editing them too much. Now I just do some cropping, add a little contrast and maybe boost the black a little to get those suckers of the giant pacific octopus nice and dominant.

Contact Info:

Flickr: [tesscastleintheclouds](#)

teresa.hedderich@hotmail.com



Opalescent Nudibranch and Eggs on Mussels ©Teresa Hedderich
Canon Powershot G16, 6mm, f6.3, 1/125sec



Grunt Sculpin ©Teresa Hedderich
Canon Powershot G16, 6mm, f6.3, 1/125sec



Bull Kelp in the Current ©Teresa Hedderich
Canon Powershot G16, 6mm, f6.3, 1/125sec

Featured Videographer: Katie Morgan

From first light on any given summer day, my childhood routine was to wade the water's edge as tide flats overtook the Sound. This had me employed until a sharp, distinct whistle pierced the air, which was my father's cue to come home for dinner. While impossible to define when I truly started diving, I took my PADI scuba certification in the winter of '88.

It was a snowy afternoon at Titlow Beach, a dive to practice mask swaps and air-share skills with a rather reluctant buddy. I was then swept off to Maui for Dive No. 5, and final certification, the dive of the Five Graves. White-tipped reef sharks, a James Bond underwater cavern (complete with super-secret air pocket you could sit up in!), all in gin clear water? I was hooked.

It wasn't until years later that a woman named Sue Trienen handed me her Nikonos III at God's Pocket that I started shooting underwater images. Imagine in today's digital world being on a site like Hunt Rock and only being able to take only 36 photos, 37 if you rolled the film carefully. I eventually learned to control what she used to call 'Buck Fever' and became more selective about what I shot. It's a gift to be able to share the beauty of such magnificent creatures and the vibrant colors of our rich, cold waters.

After years with a Nikonos V and its endless barrage of Pelican cases filled with strobes, Ikelite systems, lenses, macro frames, chargers, toolkits, O-rings and gobs of silicone, I set down the camera, opting to live the moment. It's a different kind of diving.

When you dive as often as I do, you see incredible, sometimes unbelievable, events. I found myself wanting the ability to share images again. However, I didn't want to spend every moment between dives disassembling, cleaning and reassembling cameras and connections. The solution? A GoPro. I could rig it so it was invisible to me when I didn't want it, and easily accessible when I did.

I picked up the GoPro Hero4 Black a year ago. And it IS easy to use, but there were, and still are, definite growing pains. Hopefully, I can help you bypass a few. I first tried the old selfie-stick with a Sola-500 light which blasted hot spots on the winter seals of Alki. It created laser effects in the water column and didn't miss any opportunity to pick up backscatter! Click on the image below for the video on



Image by Christine D. Isakson

the improved lighting option, though there will always be backscatter with these frisky seals!



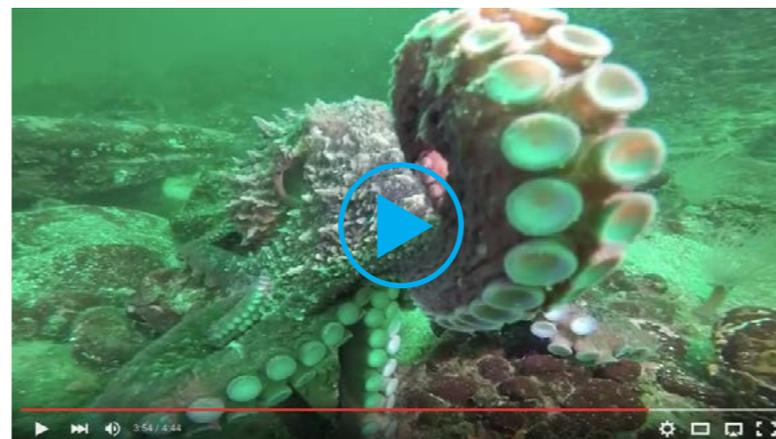
After talking to divers with the same camera, local dive shops and researching lighting systems online, I decided to design something myself. I first created it from gear that I had in storage. Remember those Pelican cases? I ended up going with a small baseplate for the Nikonos V, attaching a UK 3-level video light to an Ikelite arm from my old macro strobe. While it worked fairly well, I couldn't frame the subject by simply aiming in the general direction. So in the three days I had between trips to Egmont and God's Pocket, I ordered an LED screen with an extended housing. A word of advice, when you order the LED screen, order an extra battery, the LED screen is fabulous but is voracious on the battery life. I had nearly one bar



left on the GoPro when we were about to descend on Fantasy Island. My buddies and I would witness an adult Giant Pacific Octopus completely hood an adult Wolf Eel's den. While the camera died when the Octopus popped the largest Decorated Warbonnet I have ever seen out of its home, there was enough footage to bring you there.

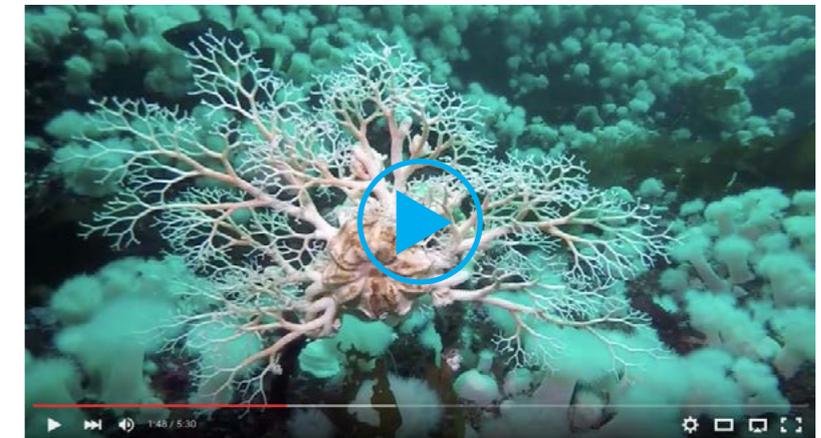
With the video strobe on a medium setting and the great visibility, I had the GoPro on low light and wide-angle settings. It seems a meter is the distance to stay within to avoid the dreaded GoPro Green. Through the LED screen, you can adjust the light to view how it will look on the subject. I'm sure the curves could be adjusted in editing but I was using the most basic of software, iMovie. Keep in mind this was during the fourth week owning the camera.

Here is another example. Because the octopus in this video was aggressive initially, I kept my distance, giving full reign to the GoPro Green.



A new strobe configuration might allow for more respectable distances from the subject. I'm not yet sure what can be done to fill the greater distances shown here in a God's Pocket compilation.

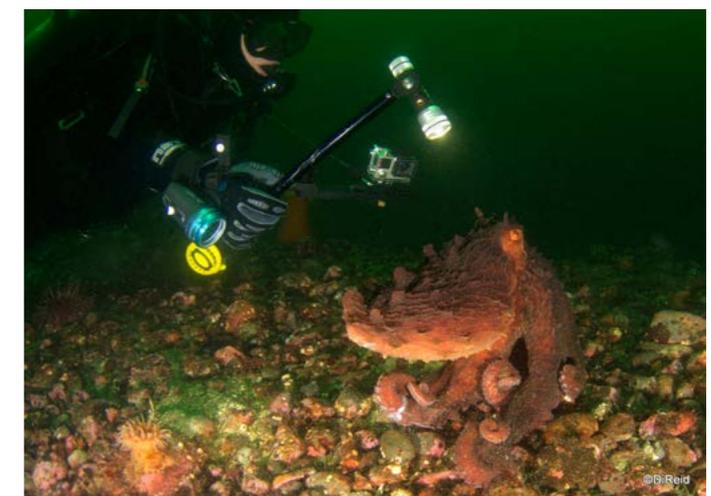
I plan to set up another video floodlight, perhaps a Sola



800, on a much longer Ikelite strobe arm. The arm and bracket are courtesy of an 8lb TTL strobe for my old 28mm lens. The arms and base now outweigh the camera and housing at least 30:1. My goal is to direct fill light further out without blasting out subjects closer in.

The only solid advice I have is to be prepared to spend some money, as you'll probably find the GoPro is simply a gateway camera.

One improvement will lead to another; next, you'll want to zoom, and to have greater depth of field. You'll want to capture the color that your photographer friends do. Before you know it, you'll need a crew of four just to lift the meter-wide dome port to the water and you'll have to book an extra room just for your gear!



Katie videoing a GPO (Image by Diane Reid)

Pacific Adventure Charter For Sale

By Dan Clements

Pacific Adventure In Transition

The past two years have seen a number of major changes take place with Pacific Northwest dive operators. It appears that 2016 will see another significant transition.

After the summer and fall dive seasons, Don Coleman is looking to either sell his Pacific Adventure dive operation, or place his 38' dive boat Down Time, compressors, and other related equipment up for sale. After 15 years of running what I feel is the top dive operation in Washington State, Don is looking forward to changing routines and making land explorations with his wife Diane.

Those who have dived with Don appreciate his focus on safety, informative briefings, and the

exploratory work he has done to open up new dive sites in Hood Canal.

If you have not previously dived with Don, now is the time to do so. Pacific Adventure is based in Pleasant Harbor, a few minutes south of Brinnon on the east side of Hood Canal. It is about a 45-minute drive from the Kingston Ferry Terminal to Pleasant Harbor, so dive outings can either be single or multiple days.

Down Time is a great dive boat for photographers. It holds a maximum of six divers, and the stern area is enclosed during inclement weather for protection from the elements. And the dive sites! We very much hope the business continues, as many of the locations are accessible only by boat and provide outstanding subjects for photo and video. The



- Daniel Hershman

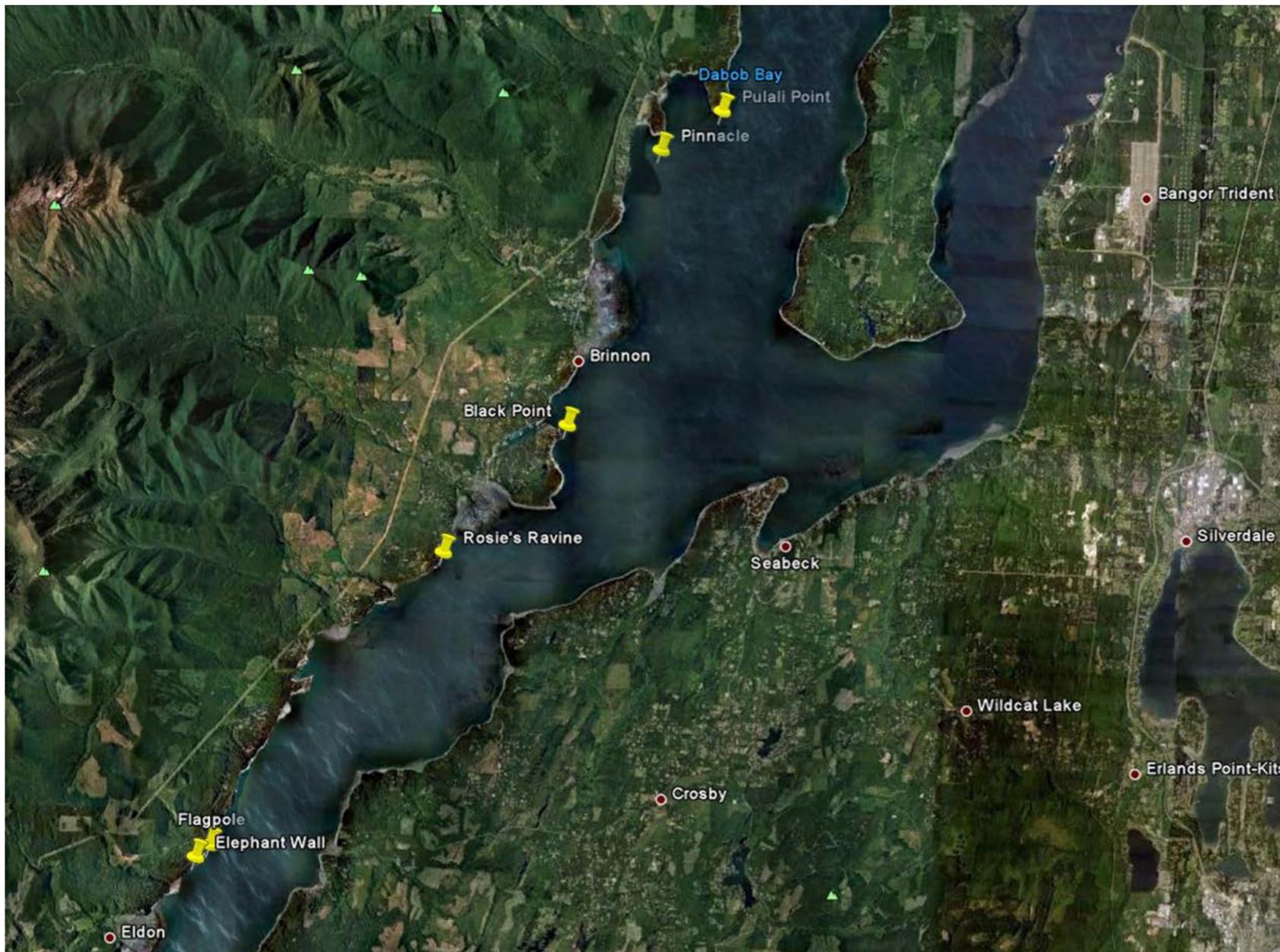
map below shows some of the major dive sites serviced by Pacific Adventure.

My personal favorites are the Pinnacle and Pulali Point. Here are a few photos from diving with Don over the years. Just a few final thoughts. First, if you want to make some quality dives with a quality operator over the next few months, give Don a call at 206.714.1482 and book some dives with Pacific Adventure.

Next, if you have ever thought about wanting to own and

operate your own dive business, start a conversation with Don about possibly purchasing Pacific Adventure and its assets. It would be great for the dive community to continue to be able to dive the amazing Hood Canal jewels that Don visits.

Lastly, if you have dived with Don, watched his children grow up, enjoyed fresh cookies and hot dogs on surface intervals, and appreciate the contributions Don has made to the dive community, consider dropping him a thank you card, [email](#), or phone call.



Google's Nik Collection Now Free!

March 24, 2016 Press Release

Photos by Kerry Enns

Photo enthusiasts all over the world use the Nik Collection to get the best out of their images every day. As we continue to focus our long-term investments in building incredible photo editing tools for mobile, including Google Photos and Snapseed, we've decided to make the Nik Collection desktop suite available for free, so that now anyone can use it.

The Nik Collection is comprised of seven desktop plugins that provide a powerful range of photo editing capabilities -- from filter applications that improve color correction, to retouching and creative effects, to image sharpening that brings out all the hidden details, to the ability to make adjustments to the color and tonality of images.

The latest Nik Collection is be freely available to download: Analog Efex Pro, Color Efex Pro, Silver Efex Pro, Viveza, HDR Efex Pro, Sharpener Pro and Dfine. If you purchased the Nik Collection in 2016, you will receive a full refund, which we'll automatically issue back to you in the coming days.

We're excited to bring the powerful photo editing tools once only used by professionals to even more people now.

<https://www.google.com/nikcollection/>

Editor's Note: *These are not how I would normally choose to edit these images, but it's fun to see what you can do.*



Original Photo Edited in Lightroom



Edited with Color Efex



Edited with HDR Efex



Edited with Analog Efex



Edited with Silver Efex



The Photographer's Buddy

By Bob Bailey

Like many of you, I like to take pictures underwater. Before I got a camera, I frequently dove with other people who took pictures. Bringing a camera underwater, or diving with someone else who does can put a strain on a dive buddy relationship. I'd like to share with you some of the things I've learned over the years about being a photographer's dive buddy and about diving with others while I was the photographer.

When one or both divers in a buddy team take a camera with them, the picture-taking demands a great deal of the diver's mental "bandwidth" – the diver is less able to maintain a good buddy

relationship. To manage the team, both divers need to compensate for this fact by establishing “roles” that give each diver certain responsibilities. Discussing these roles before the dive helps create an expectation that maintains the buddy relationship during the dive.

Being a photographer’s dive buddy takes a certain mental approach. You need to view the achievement of the photographer as a critical part of your dive plan, rather than something that’s incidental to it. You need to tailor your role to that of a helper rather than a passive observer with goals of your own. Often this requires an adjustment in how you dive.

As a photographer’s dive buddy you need to maintain a position where the photographer can easily see you at all times. Keep in mind that photographers are spending even more than the average effort actively seeking photo opportunities. It is especially important to make an active effort to be “seen” while your buddy is taking a picture. Looking through the camera’s viewfinder narrows their field of view considerably. You want to be in a position where your buddy doesn’t have to look around for you when taking pictures, but instead simply has to look up or slightly to the side to find you.

In a high ambient light, this means positioning yourself facing the photographer, where they can see you without taking their eyes off the viewfinder. In more “normal” Puget Sound conditions, shining your dive light toward the side of the subject is a good way to achieve this ... just remember to keep it out of the field of the photo, because it’s also important not to interfere with the photographer’s ability to get the shot. Also, be careful with your trim and

buoyancy control – the last thing a photographer wants is a ‘silt tsunami’ rolling across the subject as they’re lining up the shot. So facing the photographer and keeping your fins pointed away from the subject is always a good idea. Proper positioning is a learned skill that takes forethought, effort and practice, just like good buoyancy control, trim and finning techniques.

The photographer has some additional responsibilities too. Diving with a camera narrows your view and increases your task-loading. Managing both a camera and a buddy is easier if you maintain good communication protocols with each other. Before taking a picture, establish eye contact with your dive buddy and make sure that they are where you expect them to be. Don’t wander off or change direction if you spot something interesting. Get your buddy’s attention first and signal your intention by pointing out the subject to your dive buddy. Be patient and move slowly, to allow your dive buddy the opportunity to get in position before you set up the shot.

Establishing roles become even more important when both divers have cameras. Diving side-by-side becomes almost mandatory, because both of you will be looking for things to take pictures of, and will have less mental bandwidth than usual for your dive buddy. A lot of times, agreeing to “alternate” roles as observer and photographer help keep the team integrity intact. When one diver finds a particularly interesting subject, you alternate roles while each diver takes a turn photographing the subject. It is rarely a good idea for both divers to be taking pictures simultaneously unless conditions allow you to be both taking pictures of the same subject at the same time. Always keep in mind that seeing the dive through a view-

finder dramatically narrows both your vision and awareness. Consciously maintain a part of your awareness for your dive buddy.

It boils down to setting mutual expectations and determining roles before the dive by talking about it and agreeing to it, and then putting those functions into practice during the dive. At first, it may seem awkward or cumbersome, but with practice, it becomes easy and automatic. Buddies who dive together regularly tend to pick up these skills rather quickly.

Remember that not everyone will make a good photographer’s dive buddy. Our personalities, goals and diving styles determine both our comfort level and ability to dive with a photographer. Some divers find it boring, or even annoying, to hover in one spot while a photographer lines up a shot (or shot-after-shot in some cases). Others don’t mind but prefer to be passive observers. While still others get enjoyment out of actively finding subjects to photograph and diving in a way that contributes to the photographer’s success.

It is up to each of us, as a photographer or someone who’s contemplating being a photographer’s dive buddy, to determine where in that continuum our interests lie, being honest with ourselves and our dive buddy about our comfort level when diving with someone who wants to take pictures.

Fluorescence Photography:

Exploring New Photographic Options

by Steve Taylor and Kerry Enns



Hermit Crab by Steve Taylor

Fluorescence photography, also known as fluoro or fluo photography, seems to have been growing in popularity in the last few years and it certainly adds some unique challenges. We, Steve and Kerry, have put our heads together to try and sort out some of the information out there and make it relevant for cold water divers. We are not experts, by any stretch. Just a couple of hobbyists who love to learn. Hopefully, this article will spur others to take on the challenge and share their discoveries.

Steve's interest in underwater fluorescence photography began a couple of years ago when he came across some spectacular fluoro images taken in tropical and semi-tropical regions, particularly the images by Kevin Deacon published in X-Ray Magazine (2013, vol. 55, pp. 84-91). At the time, he had not seen any underwater fluoro shots from the PNW, so he made some inquiries. A local underwater

camera distributor advised him that fluoro photography in the PNW was "challenging." Undeterred, he experimented with various types of fluoro gear and learned the true meaning of "challenging", but persisted in exploring various solutions. Underwater fluorescence in the PNW tends to be subtle, as compared to the bright fluorescence in the tropics, but nevertheless, can be quite beautiful.

Kerry's interest in this type of photography was also piqued by some of the terrific images that came from the tropics. She did not pursue it at the time due to cost, however. Recently, while learning about underwater infrared (IR) photography for the Winter edition of PNW Diver, she began to understand better the concepts of wavelengths within the light spectrum and their relevance to underwater photography. With a basic understanding of IR under her belt, she decided to explore the other end of the spec-

trum. At the same time, Steve began posting his fluoro images online. In hopes of coming up with an inexpensive, DIY version, Kerry began researching and collaborating with Steve and another PNW Diver, Eli Wolpin, to better understand this new medium.

What is Fluorescence?

Fluorescence is different from bioluminescence. Fluorescence requires a blue or ultraviolet light source to excite the proteins of an organism or a mineral. Once excited, the proteins give off light of a particular colour, with common fluorescent colours being green, red, yellow, and purple. Although UV light does excite fluorescence, it tends to be dim. For more on that see Lynn Miner's White paper available [here](#). To see fluorescence under a blue light you use a yellow filter, fitted over your mask and your camera lens. It filters out

the blue or ultraviolet light, allowing fluorescent light to pass through the filter enabling you to see or photograph fluorescence. Please note that UV light does not require a yellow filter, but the risk of UV exposure to YOUR eyes and the eyes of the critter, it's best to stick with blue.

In comparison to fluorescence, to see bioluminescence on a night dive, you turn off all sources of light so as to see the algae, etc. glowing. In Howe Sound, Opalescent Squid look beautiful and may glow at night, but they do not fluoresce; they exhibit bioluminescence.

Fluorescence diving is typically done at night because fluorescent light tends to be weak. Daylight typically washes out fluorescence, making it difficult to see. So, you switch on your flashlight with its blue filter, place the yellow filter over your mask, and take a giant stride off into the inky blackness on your PNW night dive. What do you see? Mostly nothing, because not many things fluoresce in the PNW. Because your source of illumination is a blue light and you are wearing a yellow filter, you will not be able to see anything that doesn't fluoresce. It is usually a good idea to bring a regular flashlight (and a backup light) when you are fluoro diving so that you can navigate underwater, illuminate camera controls when necessary, and perform other safety tasks that require full illumination.

Fluorescence photos are often dramatic, beautiful, and other-worldly. However, is fluorescence photography simply a gimmick for creating weird photos? The short answer is no. The long answer is: Fluorescence reveals something about the underwater world that we do not usually see. Some marine organisms do not see full spectrum light as we do because longer wavelength light (red light, etc.) is filtered out at depth. The visual experience of these

organisms might be more akin to seeing as we see with fluorescence filters. So, fluorescence photography provides insight into what it might be like to see like a crab or shrimp. In some cases, it is conceivable that fluorescence might serve some sort of signaling or warning function, just like the bright colours on poisonous fish serve to warn off predators. But in other cases fluorescence might simply be an incidental effect of the organisms proteins with no apparent survival value. Nevertheless, when we shine our (full spectrum) flashlights on marine creatures on night dives it is erroneous to assume that we're seeing the underwater world for how it really is; we're introducing light wavelengths (colours) that do not appear at depth. Fluorescence diving and fluoro photography remind us that we can broaden our perspectives by considering other ways of viewing the world.

Steve took the following images during fluorescence night dives at Kelvin Grove in Howe Sound. The camera details and photo specifications were as follows: Nikon D810 in a



Anemone by Steve Taylor



Spot Prawn by Steve Taylor

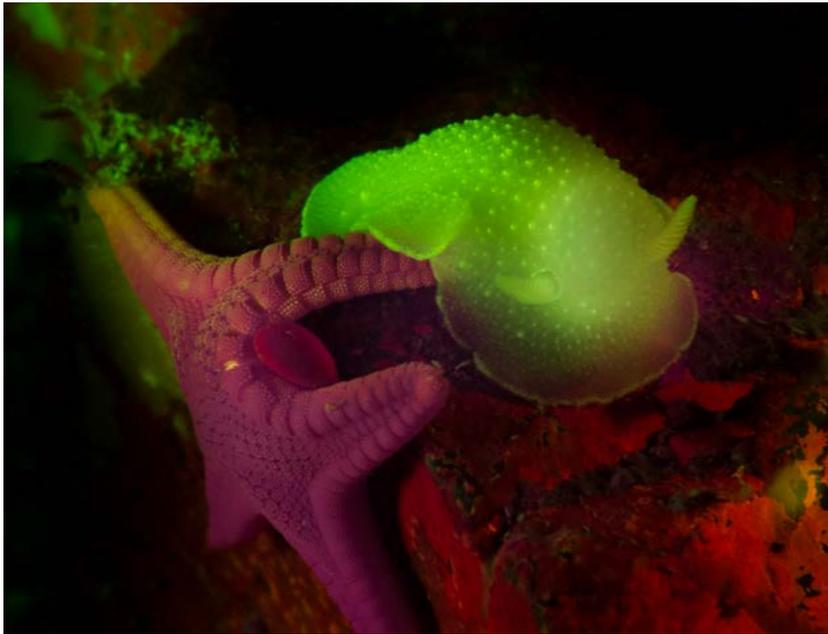


Image by Steve Taylor

Nauticam housing, Nikkor 60mm lens, dual Sea & Sea YS-D1 strobes with Fire Dive Gear (FDG) blue filters, Nightsea and Galaxy Blue focus lights, FDG yellow lens filter, ISO 400, 1/60, f11, and a combination of auto and manual focus. He used a wide aperture to provide sufficient light for focusing. As a result, the depth of field was shallow.

We mentioned that fluoro photography is typically done at night, but in the PNW there are conditions in which it can be done during the day. Daytime fluoro photography in the PNW is best done during overcast conditions in which there is an intense plankton bloom in the top layer (e.g., top 20 feet) of water. In these circumstances it

is sufficiently dark in, say, 60 ft of water, to make it possible to see fluorescence. The following image is an example of daytime fluorescence photography, taken by Steve at Bowyer Island in Howe Sound. The image consists of

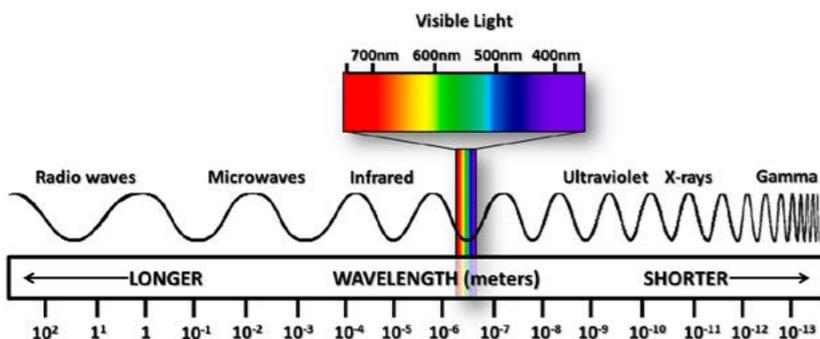


Daytime Image by Steve Taylor

a blend of ambient light and fluorescence. Here it can be seen that the dorid is fluorescing green and the algae on the rock is fluorescing red. This photo was taken using a Sony RX100 compact camera in a Nauticam housing, using Sea & Sea YS-01 strobes with Nightsea blue filters and a Nightsea focus light.

The Science Behind Fluorescence

The visible light spectrum, ranges between 350nm to



<http://www.ces.fau.edu/nasa/module-2/radiation-sun.php>

about 750nm (see Figure below). When taking IR images, the filter on the camera blocks out light in the red range, that is, longer than 720nm. For our viewing pleasure, converting that very red image into black and white, gives a pleasing result (see Kerry's recent article in the Winter 2016 edition of PNW Diver on IR photography). In fluoro photography the camera blocks all visible light in the opposite direction; that is, in the blue range: 450 - 480nm. The strobes and focus lights are the blue spectrum, which causes marine organisms to fluoresce, but as mentioned earlier this blue light is filtered to better see the fluorescence. Lynn Miner, a physicist with Fire Dive Gear, has been researching this extensively, and a detailed White Paper is linked here and below.

Here is a short list of things that display fluorescence in Steve's dives in Howe Sound: Some organisms fluoresce brilliant green, as if electrically illuminated from the inside. These include some types of anemones and feather duster worms. Most other organisms fluoresce less intensely but still beautifully. Kelp fluoresces in rich reds and oranges. The algae growing on the shells of hermit crabs fluoresce in shades of red and yellow. The hairs on the legs of the crabs fluoresce green. The effects tend to be subtle and so bright focus lights (with blue filters) are necessary for both manual and autofocus, along with bright strobes. Try not to stare at the bright blue light because it can be damaging to the eyes.

What We are Learning about Equipment

All you really need to take fluoro images are a blue light and a yellow filter. It seems simple enough, but in searching for the right blue light, we've learned a great deal. These are short commentaries of what is necessary.

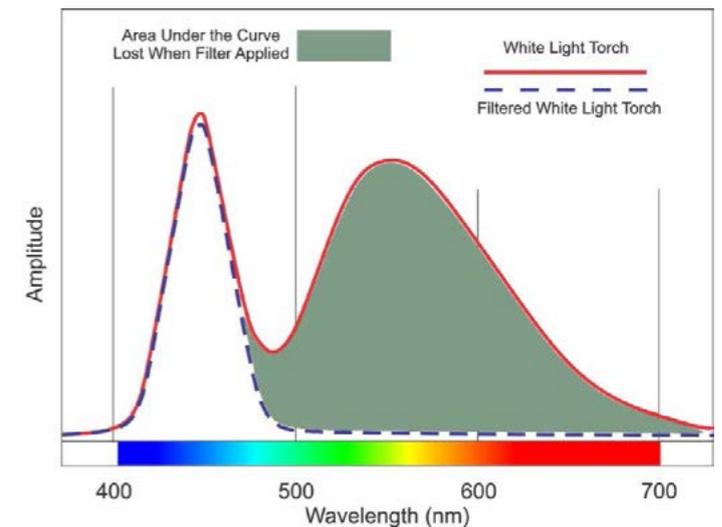
A Camera Sensitive to Light

The better the sensor quality, the better images, especially in fluoro photography. Because light is at a premium, the ISO needs to be quite high. Different cameras handle the graininess that high ISO gives. Steve's full frame camera means he can take successful images at only 400 ISO and f11 with strobes. Kerry however, on a cropped frame DSLR, needed the ISO much higher and the aperture at f4.5 without the use of strobes. GoPro cameras will be at a disadvantage here, according to Lynn Miner at Fire Dive Gear.



A Blue Light

This is where it gets interesting. Steve uses two dedicated blue lights: a Sola Nightsea and a Fire Dive Gear Galaxy, shown here. Kerry tried using the Fluoro Kit by BigBlue on her BigBlue VL2800 white light with little success. Steve even tried a blue filter on his Sola 8000 lumen light, with very dim results. Lynn Miner's White paper, referenced below, explains why simply using a white light with a blue



<http://firedivegear.com/science/excitation-filters/>

filter tends to be inadequate for viewing fluorescence. A white light produces a large amount of light, mostly in the middle wavelengths. The blue filter blocks 80% of the output, only allowing a fraction of light (i.e., the blue light) to exit the filter. The graph below illustrates this.

Perhaps if the visibility was clear, as in the tropics, light loss might not be as significant. However, in our waters where visibility is often only between 10-20', we tend to require much brighter lights.



This brings us to strobe filters. Although the blue filters will block 80% of the power of the strobe, powerful strobes like the YS-D1 will still give a significant output. Steve uses the [filter made by FDG](#) shown here.

A Yellow Filter for Both Camera and Mask

As mentioned earlier, the blue light washes the area with the color blue. The yellow filter removes the blue so that we can process better what we see. This can be a simple yellow mask that covers the primary mask, a custom made mask filter (FDG make them custom), or a yellow acrylic clipped onto the rigging as shown in the image below from [Reefphoto](#).



The camera also needs the filters, whether directly on the lens inside the housing, or on the exterior. Cheaper point and shoot cameras or GoPros will need an exterior filter.

The camera also needs the filters, whether directly on the lens inside the housing, or on the exterior. Cheaper point and shoot cameras or GoPros will need an exterior filter.

Backup white lights

This is just a good idea when night diving. You'll need to use white lights for signaling your buddy, for navigation, for seeing your gauges, and more. If you are using a dedicated blue light, then two white lights are probably wise in case one fails. Safety first, please!

Areas to Explore

There are several areas that might be worthwhile exploring yet. The most obvious will be comparing the different types of dedicated blue lights available. As mentioned already, Steve has the Sola Nightsea and the FDG Galaxy. He has noticed some difference in the colors these lights cause to fluoresce. Fantasea has a new light, [Radiant Pro 2500](#) that boasts of dedicated UV and blue light modes as well as white and red. We wonder at the strength of these modes and the subtle color differences? Does BigBlue plan on making a dedicated light to go with their ever increasing array of lights? All FDG blue lights have the same characteristics

No doubt there are different colors of yellow filters. As in the blue lights, how these yellow filters compensate color would be an interesting area to explore. Kerry has the BigBlue yellow barrier filter, but there is no color number on it for comparison. When she compared her image to her buddy's image using the same subject and same blue light, their images were different, one having a more pink cast and the other an orange cast. A Google search shows lots of choices from various manufacturers.

It also seems that there are different manufacturers of strobe filters. Reef Photo sells a generic strobe filter that appears to be a plain blue acrylic. How does that differ from those with a dichroic film on it? Kerry bought a sheet of blue acrylic #2424, 3mm thick to try to create a strobe

filter. She has not been able to test it yet but suspected that it won't work as well without the dichroic coating. Miner confirmed this and goes into detail in his White Paper available by clicking [here](#).

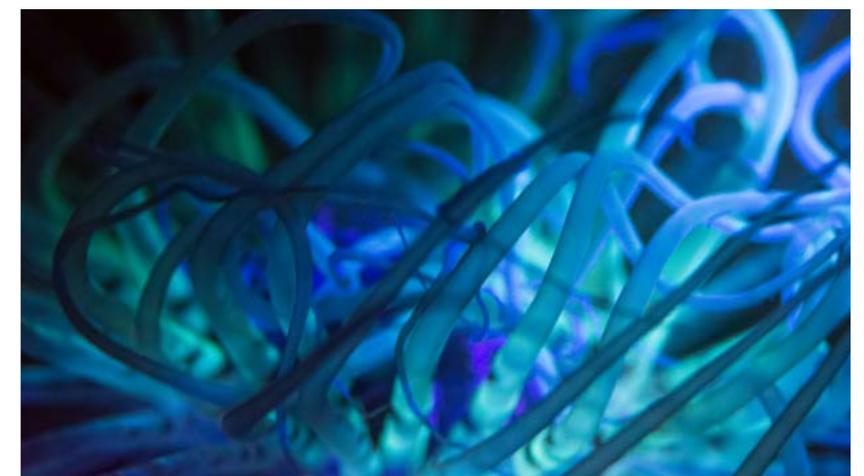
It would also be interesting to test fluoro photography using popular point-and-shoot cameras such as the Canon G-series or the Olympus TG-4, with and without strobes.

Concluding Remarks

Viewing fluorescence in our water is amazing, but capturing images of it are even more challenging. Winter seems to be the best time to get out and experiment. We need to research available gear. [Perhaps this article will encourage others to try it out and share their experiences.](#) There is an open group for sharing and learning on Facebook called 'Fluorescence Diving / Underwater Fluorescence'. Consider sharing there or directly on PNW Diver's Facebook page.

References

Miner, Lynn. January 2015. *White Paper - Why a Dedicated Blue Source is better than a White Source with Excitation Filters for Fluo Diving* (click [here](#) for pdf) <http://firedivergear.com/>



Tube-dwelling Anemone at Whytecliff, BC - image by Kerry Enns

Aluminum Printing

Growing in popularity

by Kerry Enns

The concept of printing on aluminum is gaining ground. In the last issue, I explored the idea of printing on acrylic. This time, I thought I'd pay a visit to Tyler Lanz of Lam-inart Industries. Laminart is primarily an online company, but I was able to visit the Abbotsford studio where the magic happens.

I asked Tyler why there is so much excitement over aluminum printing. He explained there are several advantages to this style of printing. When it comes to water-related prints, the results are stunning. The blacks are deep and rich and the highlights almost glow. In other words, the depth of contrast really makes the images pop, even more so when the images are exposed to daylight.

The printing process itself also has some perks. No worry of dust, bumps or bubbles. The prints are easy to mount on your wall; the aluminum is laminated onto a light-



weight MDF that covers the entire back with a slot for the hanger. Other companies will put a strip of MDF on the top and bottom of the print, but this can cause bowing in the metal over time.

The process of applying the ink is also unique in metal prints. When an inkjet printer prints on paper, each pass will overlap the last. Remember the old inkjet printers where you could see lines across the print? Things have improved dramatically, but applying the ink to metal involves laying down of micro-dots. These microdots are baked onto the metal. Oddly enough, the larger the print, the clearer the image because there are more micro-dots being laid down. This is reverse thinking.

When sending images in for printing, either a high-res JPEG or TIFF file will work. If the TIFF is too big to email (larger than 25Mb) then Dropbox will work famously. The standard Photoshop color profile is fine. What I found comforting was that Tyler will have a good look at the images before sending them to the printer. If he sees excessive backscatter, odd cloning patterns or strange skin tones, he will contact the artist. He'll either ask for an adjusted file or do the adjustment himself, depending on the situation. I know there have been times when I thought I had rid the picture of the backscatter, and then I viewed it on another screen. Tyler knows how his screen translates to print and will do his best to makes sure it is awesome.

Tyler is set up for shipping to the United States and reminds our southern neighbours that our weak dollar means everything in Canada is on sale. His U.S. business is booming. Laminart uses Purolator for shipping with a huge quantity of protection in the packing. There has not been a single incident of damage in the last year.

Laminart does other kinds of printing as well, including Giclée Canvas, bamboo mounting, 3/8" MDF mounts, Float, LUX, and LEX mounting. They also provide digital scanning for their customers. Details on these products can be found on their website <http://www.laminartindustries.com>. You can contact Laminart at info@laminartindustries.com or at 1-800-567-8070.

If you use Laminart or any of our featured businesses, please let them know your connection with PNW Diver magazine. Pick up options are available for local customers.



Above: Tyler Lanz shows off a black and white aluminum print.



Below: There is no store front, so look for this sign on the door.



Video Part 6: Camera Moves

by Mike Meagher

Video is different from still images in several respects. In this article, we discuss the unique aspect of multi-dimensionality and introduce some new concepts as well.

Affinity and Contrast in your Visual Story

An astute director purposely takes control of the look of the video, the visual story, to supplement and augment the formal narrative story. One method used to control the viewers emotion is through the direct control of Contrast and Affinity.

If the story or segment in the film is about something tranquil and peaceful, then the visual story features elements that make use of Affinity in many visual elements. Affinity is present when the image has mute color and tone or little or no camera motion or slow subject movements, all

combined to give it a tranquil look. Affinity can also be applied by using few cuts, slow transitions, slow timing, slow pacing, very few subjects, and such. All are elements with Affinity to supplement that tranquil mood.

If the story has a scene with lots of action and tension or drama, the filmmaker may use what is called Contrast in the visual elements to supplement this emotion. Contrast in elements is present when you use a broad range of color tones, have high contrast shadows, lots of motion for both the camera and subjects, dramatic cuts, fast transitions, many subjects, to list a few.



This video shows affinity at the beginning and contrast at the end.

Knowing how to control Affinity and Contrast in the various visual elements of the video can be skillfully used to reinforce the visual story to the narrative.

For instance, in the classic Star Wars scene where Luke and fellow fighters attack the Death Star, this battle scene featured many Contrast elements all working together to supplement visually the high tension and action. It featured high tonally contrast imagery, harsh lighting, rapidly moving subjects, many subjects, fast cuts, fast tempo music, and more. That was a scene with much Contrast in many respects.

Alternatively, watch the classic film 2001 A Space Odyssey. There were many space scenes in that movie using the Affinity approach in elements to convey the tranquil mood of space. Silence, slow moves, monochrome images, actors monotone voices, the dull voice of HAL, little or no camera moves, all combined Affinity to supplement each other and the story's mood

In any particular film scene or segment (a related short collection of scenes) there are many parameters where you can choose to implement either Contrast or Affinity choices to those elements. In this article, we focus on the core camera movements and how they are used to provide contrast or affinity in your film.

Two versus Four Dimensions

Still images are pretty much only two dimensional. A photograph has both width and depth in the scene, and that is pretty much it. Regardless of how long you stare at a photograph or how long a print hangs on the wall, it is pretty much remains a static image conveying the same story.

A few seconds of video, (also called a “take”) can convey up to four dimensions of information. In addition to showing a scene with both the dimensions of width and height,

it carries a third dimension of time as well as a fourth dimension of depth. This multi-dimensional richness allows a short video take to convey much more information to the viewer than any still image. Besides adding depth to your film the adding camera movements can introduce contrast or affinity to reinforce the narrative

Basic Camera Moves: The Static Shot

The static shot also called locked down shot, is the easiest shot to create on dry land. However, it is the most difficult to create underwater. It is when the camera is rock-solid, and there are no movements of the camera. Anyone can swim around with an underwater video camera but obtaining a locked down shot underwater requires the use of a tripod or other support or placing the camera on the bottom. If you can pull off a static shot video, it looks much more professional and more polished than the amateur films and introduce some Affinity to your story.



<http://www.amazon.co.uk/Joby-JB01300-GorillaPod-Action-Tripod/dp/B00GTZJA7Y>

My buddy and I sometimes take a small “gorilla pod” on some dives or a custom made quad-pod(a tripod having

four legs) on some of our excursions. We lug either with us and “set up” on the bottom when the terrain and conditions permit us to do so with out disturbing any bottom life. The results look amazing but at the cost of less video recording since as we have to spend more time dealing with the setup. It is something to consider if the conditions permit and gives your video a professional look.

The Pan Shot and Tilt shots

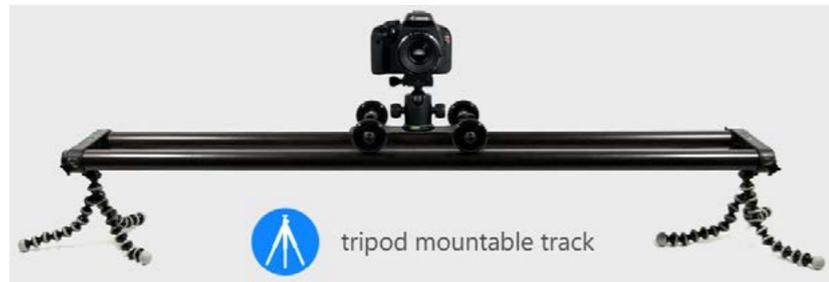
Adding camera moves to your video take inserts that dimension of depth to your images and can significantly supplement the story. Make use of camera movements to add depth but beware when doing so to do them right. Camera motion and speed can add Contrast to your visual story as well.

A “pan” is when the pointed direction of the camera changes in the horizontal direction during the take. When you alter the pointing of the camera in the vertical direction, that is called a “tilt.” The camera remains stable in the same location when performing both pans and tilts. These movements are the staple of the camera operator and are easy to accomplish on land with a good tripod fluid head. Underwater it takes a smooth and steady hand but can be achieved with practice hand-holding the camera. I have a fluid head on my tripods that I also sometimes use. The rule of thumb is to pan ‘slow’, and slower than you think and the time for a subject to cross from one edge of the frame to the other should be around seven seconds. Any shorter than the seven seconds then your pan or tilt may be much too fast for the viewer’s pleasure.

The Dolly and Tracking shots

These shots are when the camera moves its locations during the take. On a studio set, a track is set-up and a

smooth rolling dolly fitted to the track and pushed along with the camera mounted to the dolly. Lower budget productions may make use of smaller dolly type devices called a “slider” moving the camera along a track or rail fitted to a tripod. This movement, of the camera in a side-to-side motion, is the tracking movement. Pushing the camera toward or away the subject is ‘to dolly in’ or ‘to dolly out’. Sometimes other names are used, but you get the idea.



An example of a small land-based dolly.

<http://www.revolvecamera.com/products/revolve-camera-dolly-video-slider>

Underwater we are swimming in a 3D world, and we can accomplish these moves easily by a skilled operator having proper buoyancy control in conjunction with using our arms and body motion to dampen camera movements. Consider these scenarios: Imagine swimming alongside a turtle tracking the subject as the reef in the background moves behind. Or pushing from a wide shot of a shark in a cave at the beginning then ending on a close-up of a shark’s face. Or swimming your camera through a hallway on a sunken wreck taking the viewer along. The movements here can add a wonderful dynamic to your visual story and add Contrast to the scene depending on the speed and moves used.

The Crane or Boom Shot

Moving the camera from an aerial perspective to a low-angle or in the opposite direction all during the take is



An example of a land-based boom.

<http://cheesycam.com/the-t-rex-rig-stabilizer-crane-wth/>

accomplished on land by a camera on a crane or boom, drone fitted with cameras or computer-controlled, wire-suspended rig. Boom shots are often used to convey a wide area perspective to set up the scene. The SCUBA diver can accomplish these camera movements underwater with much more ease. Try using your arm as a boom to hold your wide-angle camera above a scene then bring it down closer to the subject. Alternatively, swim your camera from a wide and high placement down to that diver on the bottom. Roll the camera as you follow the anchor line to the bottom to help set the scene.

Slow, Steady and Smooth

Shaky and jerky camera movements have a place if that is your desired effect. Watch any “Jason Bourne” action film

and you see lots of this technique in an attempt to add tension and movement to a scene and Visual Contrast.

However, most viewers bore easily watching a shaky and jagged looking video. It looks homemade and can even make the viewer sick. The serious underwater camera operator becomes obsessed with using every trick possible to take out the shake from their video. ‘Slow and steady and smooth’ is the mantra. If your camera movements are smooth and subtle, the viewer forgets about the camera and focuses on the subject. Too much camera movement brings attention to the camera and not to the story or subject.

Seek out Unique Perspectives

Study any good motion picture and you often see the director make use of unique and out-of-the-norm points of view of the subject to augment the visual story. It helps immerse the viewer mentally into the scene. Cutting in several different points of view of the subjects builds a three-dimensional space of the scene in your mind and taking you into the story. Try putting your camera on the bottom pointing straight up towards the fish swimming overhead. Try looking straight down on your buddy as they swim over the deck of that sunken ship. Move to the side or behind the subject showing their point of view. When you are filming a subject try using several different perspectives and seek to employ points of view that you would never normally encounter in real life. It is amazing how unique angles can turn a standard video into something special for the viewer.

Put the Camera Moves (or none) to Good Use

Now that you know more about the basic camera moves

you can decide as a filmmaker what type to use to augment the film's visual Affinity or Contrast. Use camera movements for a reason. If you are trying to tell the story of the graceful and beautiful anemones, then you may choose to use locked down static shots or very subtle movements to give your scene Affinity and to supplement that emotion. If you are telling that story about the scary and dangerous shark encounter, then multiple camera angles with action and many pans, dolly in and out shots and other camera motion may be the best way to add contrast to heighten the tension.

Some Final Thoughts on Time

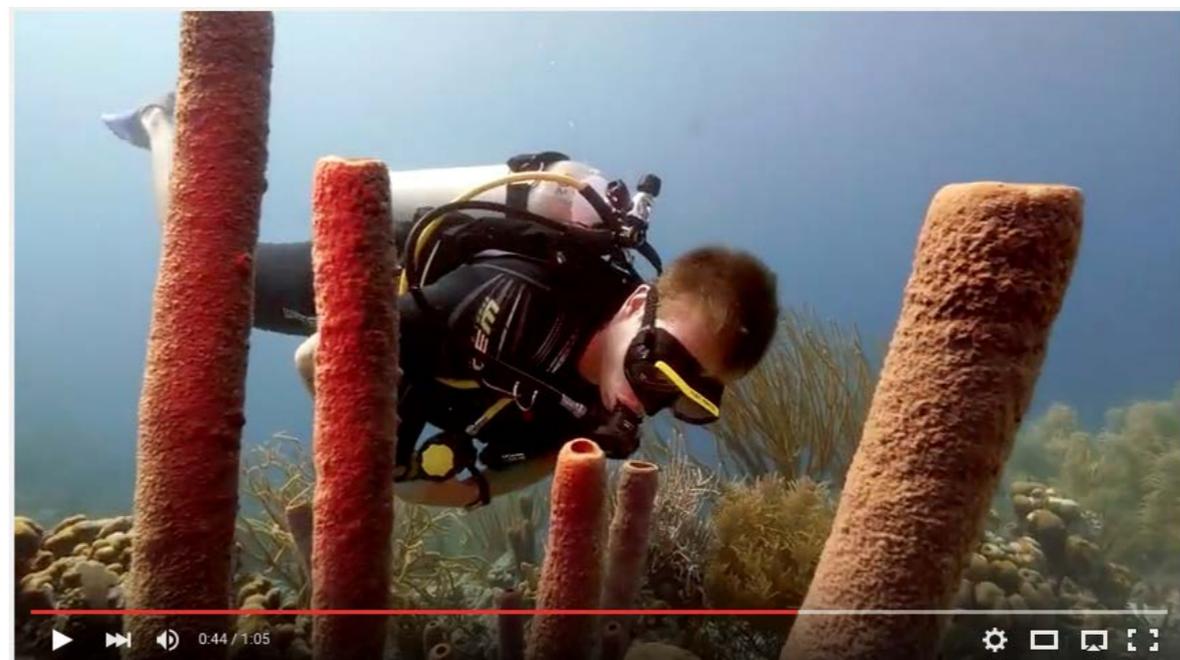
I love how video adds time to the imagery. It is what makes video worthwhile and extraordinary. I recommend recording each take at least ten seconds long or more. Always shoot more than you think. You can always edit a shot shorter, but you can never make it longer. I allow for the beginning and ends of my take to have jerky camera motion that needs to be cut out. Allow for those deletions when considering the length of your take. Give your subject the time to move about and do its thing and record it. **Set your video camera on a tripod, start the camera rolling, then leave it. Swim a few feet away. The silt will settle and often skittish marine life will return to the scene if you are away.** You get some interesting stuff then.

Supplement your camera work with the appropriate audio and editing and you have a convincing story. The use of these techniques is the art of making your story come together.

Editor's Note: Use the videos below to identify techniques Mike has taught us, and then go out and try it. Don't forget that you can submit a favorite video to "Your Lens. Your Story."



Video: Night Diving with the Manta Rays in Kona Hawaii



Video: Richard and Encho explore Klein Bonaire - Promo Video for Toucan Diving

Back Button Focusing: A Manual Focus Option

by Kerry Enns

I love back button focusing. I am not even sure I can go back to the regular version of depressing the shutter button half-way, recomposing and then finishing the shot. Try to that with big, fat dry or wet gloves underwater and it is nearly impossible. The simple solution is to reassign the job of focusing to another button which releases the job of the shutter to do just that: shutter.

There are a couple of reasons why you might consider changing to back button focusing. It eliminates the lens having to hunt for the focus. Consider the following situation: You have found a critter that is skittish. You approach the subject, depress the shutter halfway to focus, and everything goes blurry while the camera decides on what to focus. With the back button, you focus with the thumb, let go and rock the camera until the subject is focused, then depress the shutter. No hunting. You can fire off several shots without needing to refocus.

There have been times where I have struggled, even with back button focusing, to focus at very close ranges. What

I've done is to focus on something else that is a similar distance, shift that camera toward my subject, then slowly rock the camera back and forth until it is in focus. Click!

Pre-focusing is another excellent reason. Sometimes we lay in wait, hoping the critter will do something fun. By pre-focusing, you can quickly snap that picture without worrying about losing time to a wandering shutter-driven focus. The cumbersome version of this is to lock the focus, switch the camera to manual focus, then compose and shoot. Back Button Focusing is way easier.

Not all cameras can do this. My old Sony NEX 5N could not but my Nikon D7100 can. Happily, my Sea & Sea housing accommodates this. On a Nikon D7000/7100, you need to assign the AE-L/AF-L button on the upper right (where your thumb can sit easily) to AF-On. Go to the 'pencil' or custom setting, then to Controls, then choose "Assign AE-L/AF-L" button. Choose 'AF-On'. Full frame cameras will have an AF-ON button that should do the trick. That is it.



Back Button location on a Nikon D7100

Apparently Canon was the first manufacturer to use back button focusing and all their DSLR models from the last 8 years or so have this feature. The Canon Learning Center will walk you through setting this up using the following article: [Back-Button AutoFocus Explained](#).

Check your manual to see if you can use this feature. Sea & Sea created a nice lever for my camera, so it is manageable with my big, fat gloves. It appears that both Nautilcam and Aquatica have built in levers as well. Once you determine which button is used for focusing, check to see if your housing accommodates it.

Finally, a word of caution. Don't do the switch just before a big dive. Take the time topside to turn the skill into muscle memory. I promise you will love it!

Your Lens. Your Story.

This is our readers' turn to shine and to show what they have learned or experienced. Please submit entries to editor@pnwups.com.



©Scott Meixner

Isopod Hitchhiker

By Scott Meixner

“Creepy!!!!” was the first thought that entered my mind when I realized what I was looking at. It was a huge brown bug with a segmented body and cold black eyes. I had heard about the existence of giant isopods, and I don’t know if this one qualified as “giant” but it was the biggest one I have ever seen. Upon closer inspection it became clear that this large Pink Parasitic Isopod was perched on top of a Plainfin Midshipman and was quite actively shredding its way into the poor fish’s head. Plainfin Midshipman typically stay buried in the sand during the day and are usually only seen on night dives. It was the middle of the afternoon, and the fish wasn’t moving, so I assumed it was dead. Imagine my surprise when I moved in for a closer shot and the midshipman darted away, taking the tenacious isopod in tow. A Kelp Greenling spotted the fleeing pair and followed in hot pursuit. I’d love to know if the greenling was after the fish or the isopod but all three disappeared into the depths. Too bad, it would be an exciting fight to watch either way.

Shot with a Canon G15 in an Ikelite housing with a single Ikelite DS51 strobe.

ISO 80, f/8.0, 1/250 sec



©Scott Meixner



©Scott Meixner

Travel Corner

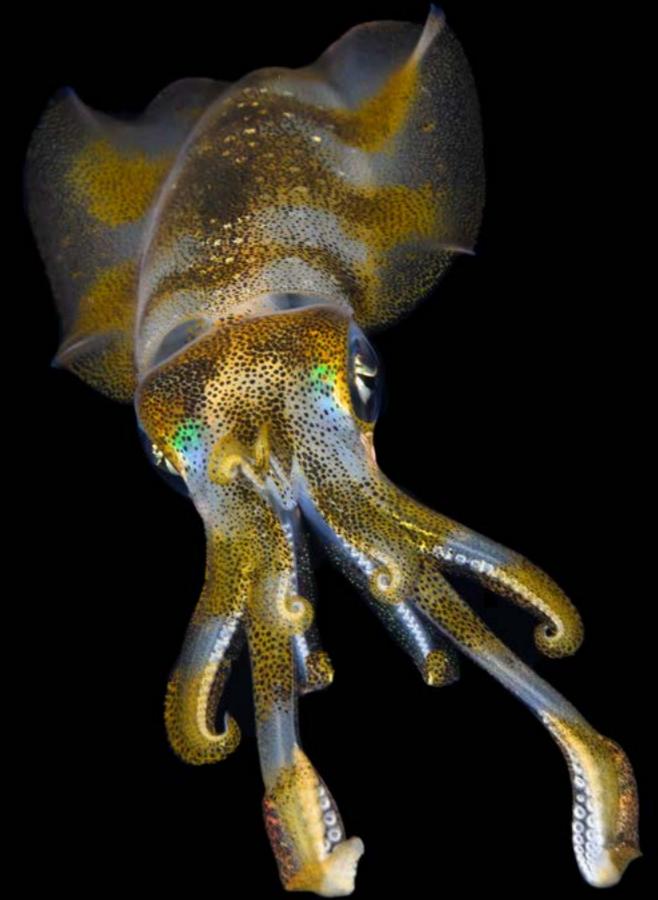


Photos by Marli Wakeling





March 14-24, 2017



Photos by Marli Wakeling

Anilao Critter Overload 2017

After the great success of our 2015 PNW Diver trip, Crystal Blue Resort in Anilao has been booked for a return trip from **March 14-24th, 2017**. Early booking guarantees us a great group price and availability, as this photography oriented resort books years in advance.

Join divers from the Pacific Northwest and British Columbia for ten days of critter-filled diving in the biodiverse waters of the Philippines. Anilao is a great critter capital:

it has both excellent “muck” diving for macro enthusiasts, and beautiful coral reefs teeming with reef fish and soft corals. Typically, one sees many species of nudibranchs, octopus, such as mimic and wonderpus, squid, shrimp, frogfish and all sorts of “bucket list” critters. Most dives are less than 75 feet in depth, affording long dive times and, therefore, increased photographic opportunities.

The resort features great views, terrific cuisine, a fabulous camera room, and guided diving with a guide and boat

ratio of 1:4 divers. They have recently added high-speed internet. Your package will include 29 dives including three night dives, accommodation, all meals, and transfers from Manila. Not included are air to and from Manila, gratuities, and alcoholic beverages. Spots are filling up quickly, and availability is limited to 18 divers.

Air Package: \$2106USD Nitrox Package: \$2222USD.

Contact scubamarli@gmail.com for more information.



Dan Clements

Washington, USA
Founder/Columnist

Dan is an adventurer who has a deep appreciation and respect for the world's natural wonders and life in its many varied forms. He has climbed, skied, sailed, SCUBA dived, and traveled throughout the world. He has made first ascents in North and South America, and run major white water rapids in Africa and the Western Hemisphere. He wrote the now sold out *Critters*, *Creatures*, and *Kelp* in 2009.

He was fortunate to have parents who exposed him to Hopi, Navajo, Seri, and Lacandon First Nations populations. Later in life he was privileged to be able to spend time among the Bushmen (San) of southern Africa, and Qechua and Aymara in the Andes. He is working to try and increase knowledge and appreciation of Pacific Northwest indigenous populations.

He holds an MBA in international finance and has sat on boards for United Way, Housing Hope, Cayenta Systems, Eden Systems, Snohomish County Public Facilities District, and Ibis Publishing.

When he is not underwater photographing he enjoys cooking, back country skiing, distance running, mountain biking, and opera. Everett, Washington is home base and where he and his wife Karen raised two sons.



Kerry Enns

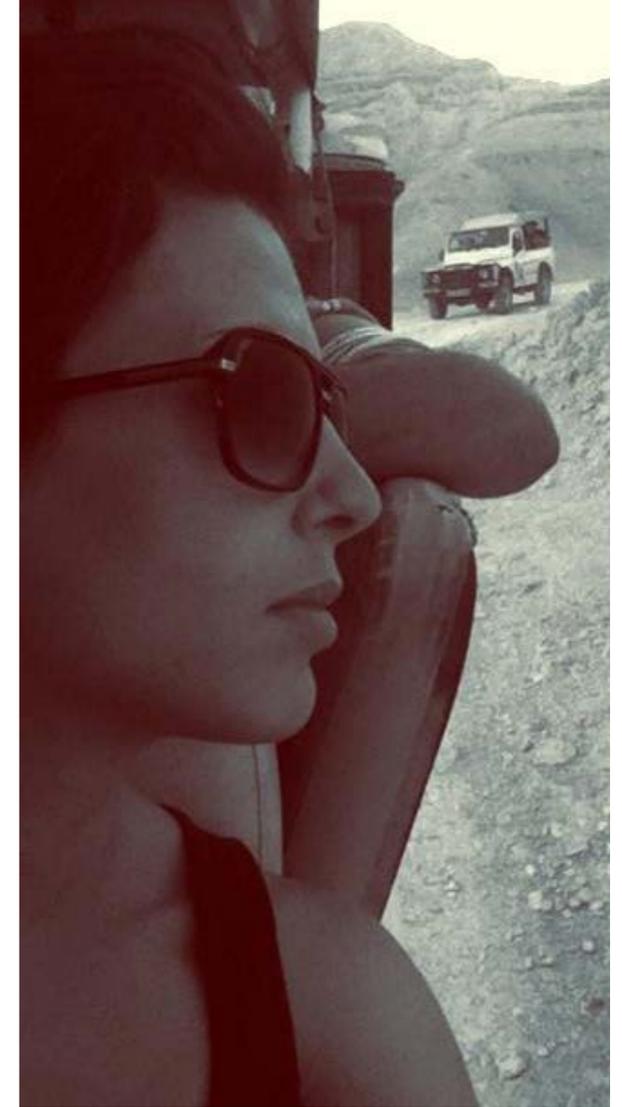
British Columbia, Canada
Editor/Publisher

Kerry grew up in Brazil as a missionary's child and moved to Wisconsin at the age of 10. While her father worked on his studies, she entertained herself by cycling, swimming and fishing and earned spending money by delivering papers and babysitting. Her family moved to Winnipeg during her high school years. After graduating, she found herself heading to British Columbia to go to Trinity Western University. She married and stayed in BC raising 2 children.

She holds a degree in Geography and is certified to teach elementary and middle school students. She currently works part-time as a Teacher on Call in order to fund her diving, photography and travel.

She enjoys traveling and has had recent visits to the India, the UK/Ireland and Maui. She hopes to continue to travel as much as her finances allow it and would like to someday dive the beautiful tropical waters world wide. She particularly wants to visit Brazil, not only to dive but to work on her fluency of the Portuguese language.

She has recently taken up freediving and hopes to learn photography in that new venue.



Talia Cohen

British Columbia, Canada
Creative Consultant

Talia grew up in South Africa, and has lived in Missouri, Rhode Island, and New York. She now calls Vancouver her home with her husband and 2 dogs.

She is a Creative Director, and has attended the Rhode Island School of Design, Brown University, MIT and Babson. Talia has produced work for some of the world's leading companies and organizations including Unilever, General Mills, SportChek, and The BC Dairy Foundation.

Since a young age she has been enchanted with the world below the surface. And, when not at the studio, she takes every opportunity to explore the underwater world, camera in hand.



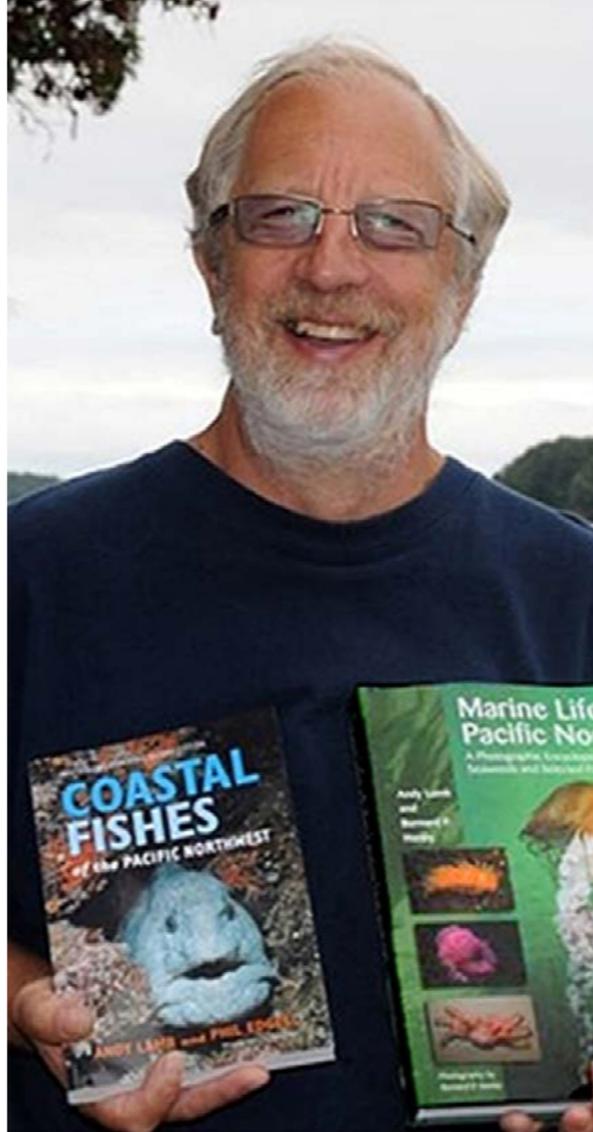
Dale Carlisle

British Columbia, Canada
Columnist

Certified in 2007, Dale is interested in several facets of diving. As a long time fishkeeper and naturalist, he loves being able to access the aquatic realm in order to better observe fish habitat and behavior. In 2010 he began a long term study of a local lake (The Cultus Lake Project) in order to learn more about an endangered species of fish that resides there.

Out of that interest, he began learning how to capture images of his subjects and continues to develop his underwater videography as both a vehicle of communication and art form.

Dale also enjoys researching the historical aspect of diving and often uses vintage era gear and techniques himself, which he shares with others at www.manfish.ca.



Andy Lamb

British Columbia, Canada
Scientific Consultant

Andy Lamb is a marine naturalist and educator who has worked as Chief Collector at the Vancouver Aquarium and as a fish culturist with Fisheries and Oceans Canada. He is the co-author of *Coastal Fishes of the Pacific Northwest* and *Marine Life of the Pacific Northwest: A Photographic Encyclopedia of Invertebrates, Seaweeds and Selected Fishes*, both are found in almost every diver's library of the region.

Andy has served as the team for PNWDiver since the beginning and helps members identify marine life and keeps us abreast of news in the scientific community.
<http://www.cedar-beach.com/about.shtml>
andy@cedar-beach.com



Bob Bailey

Washington, USA
Guest Columnist

Taking that first breath off a scuba regulator in February 2001, I knew I had discovered something very special. I've since logged more than 2,500 dives most of them here in Puget Sound, the San Juan Islands, and several places along the coastal waters of the Olympic Peninsula, British Columbia and Vancouver Island. I have also dived in California, Florida, Belize, Cozumel, Roatan, Bonaire, Hawaii, and Indonesia.

In 2003 I became a NAUI divemaster and spent the next year and a half working with several instructors learning how to teach classes, manage students, and help people improve their diving skills. In 2004 I became a NAUI instructor, and in 2006 a DAN instructor.

Besides teaching scuba, I enjoy underwater photography and technical diving. I am a NAUI Trimix 2 certified diver, and have explored many of the deep wrecks found in Puget Sound and Lake Washington. I have also pursued my passion to Florida, where I learned cave diving. When I'm not teaching classes, I am usually either planning my next diving trip or just enjoying a local dive with my friends.

Diving for me isn't just a recreational activity ... it's a way of life.